THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LI. SATURDAY, DECEMBER 3, 1887. No. 23.

ORIGINAL LECTURES.

CHRONIC BRIGHT'S DISEASE.

A Clinical Lecture Delivered at the Good Samaritan Hospital, November 23, 1887.

BY JAMES T. WHITTAKER, M.D.,

PROFESSOR OF THEORY AND PRACTICE OF MEDICINE AT THE MEDICAL COLLEGE OF OHIO.

Reported by JAMES M. FRENCH, M.D.

Wm. H. McD., grocer, Irish, admitted to the hospital May 24, 1887. Had been ill about six weeks. First noticed disorder of stomach and bowels; constipation, vomiting, and headache. After short treatment outside of hospital, he improved, and was able to be around. About two weeks after the first attack swelling of the legs set in below the knees and above the ankles; this swelling increased and extended upward. At the time he entered the hospital the scrotum was beginning to swell, as also the abdomen. The face was puffed, especially under the eyes; he was pale and waxy-looking. Constipation continued and was relieved by hydragogues given to reduce the dropsy. The swelling of the feet, legs, scrotum, and penis increased in spite of treatment.

June 5th the feet were punctured with a needle. The reduction thus obtained was but temporary. June 7th, the feet, scrotum, and penis were punctured with antiseptic precautions. This operation allowed the escape of a large quantity of water, and gave much relief, since the swelling of the penis had interfered with the passage of urine. About June 20th he began to suffer from violent headaches and vomiting. These symptoms were relieved, to some extent, by active purging. July 1st, he began to take hot baths daily at 105° F., lasting twenty minutes. This treatment rapidly relieved the headaches and vomiting, and reduced the general dropsy. His general condition improved decidedly. About August 1st, he began to cough, and cough has continued since. Some dyspnœa existed at the same time. August 16th, he left the hospital to visit near Maysville, Ky. While there the baths were discontinued. About two weeks after leaving he began to feel worse; the cough became more annoying, the dyspnœa increased, and he had pain in the region of the heart. Now for the first time attacks of palpitation of moderate severity began.

September. 11th, he reëntered the hospital. The dropsical condition was as marked as at any time before. His chief complaint now was of the cough and dyspnœa. The latter was so severe at times as to prevent his lying down. Both cough and dyspnœa were worse at night. He was again given hot baths every night at a temperature of 110° F. These baths now seemed to depress him greatly and excited attacks of dyspnœa, which lasted several hours. The third bath induced an attack from which he was with difficulty revived. The action of the heart became labored and irregular. This last was the most severe attack he had had, and lasted six hours. The baths were then discontinued. Since then the swelling of the feet, legs, scrotum, and penis has gradually increased, so that at present urination is somewhat interfered with. His appetite has been continuously good. When he entered the house the urine contained a large amount of albumen, No casts were found. June 15th, he passed seventy-two ounces of urine in twenty-four hours. Albumen was still abundant, no casts. Specific gravity 1.020. Since then the urine has been examined a number of times; albumen has always been abundant, but no casts have been found. During the last twenty-four hours he has passed forty-four ounces of urine; albumen undiminished; hyaline casts found for the first time. Specific gravity 1.015. September 25th, he passed fifty-four ounces. Since then he has not taken so much fluid. The heart's dulness is increased downward and to the left. Pulse 120, feeble.

The patient's habits before his illness have been good. He has not been a drinker. For some time before he had slept in a damp, cold, partly underground room.

Gentlemen: We have before us, I need hardly say, a severe case of chronic nephritis. Seven months ago this man was first taken ill with symptoms on the part of the alimentary canal, anorexia, nausea, and vomiting. How many cases of this kind show symptoms of this character, which are diagnosticated and treated as simple cases of gastric catarrh. This is, perhaps, proper enough in the majority of such cases, but when the case does not yield to this treatment, we at once should think of two conditions as explaining the nature of the case, namely, tuberculosis and Bright's disease. Tuberculosis we could exclude in this case, not because of the absence of cough, for some cough exists, but because the cough is found to arise from œdema of the lungs. Then, what would first lead us to suspect Bright's disease in this case, is the fact that this man suffered from persistent violent headache. The first symptoms to show themselves in these cases are generally headaches, neuralgias, more or less vertigo, and œdema of the lower eyelids in addition to the disorders of digestion which we have already noticed.

Let us consider the dropsy which plays such a prominent rôle in his history. In order to understand this subject we must transport ourselves to the early part of this century. At this time dropsy was treated as a distinct malady. Now, nobody thinks of treating dropsy as a disease, it is known to be merely a symptom. In the present case, as in most cases, it was not the first symptom presenting itself, but followed others fully as important. First of all, there were disturbances of digestion. A disturbance of digestion characterizes more or less every case of Bright's disease. The case before us is an exceptional one, in the fact that the individual has had a good appetite during the whole course of the disease. One of the most distressing

symptoms you will have to treat in Bright's disease is obstinate vomiting, both dyspepsia and emesis being so often dependent upon œdema of the alimentary canal. Next in this case, as you heard in the history, there showed itself a headache. Headache has been a prominent symptom of the case. The patient has never had convulsions. When you stand in the presence of Bright's disease you will interrogate your patient with reference to three distinct sets of symptoms: the disturbances of the nervous system, the occurrence of dropsy, and the condition of the urine. The only nervous manifestation this man has shown is headache. There has never been any disturbance of vision. Sometimes these patients present themselves to the oculist first to be treated for blindness. An examination of the fundus oculi in these cases will sometimes establish the diagnosis. The oculist sees by the side of dilated veins white patches or stripes about the optic disk associated often with minute patches or rather stripes of a dark color due to hemorrhage. The white spots are believed to be a fatty degeneration. Sometimes there is an absolute amaurosis without discoverable lesions, but this is not so common in this form of disease as in the shrunken kidney to which it properly belongs. But this man has never had any but trivial symptoms on the part of the nervous system; and the fact that the nervous symptoms in this case have been conspicuous by their absence speaks for the particular form of Bright's disease before us. We have here the chronic parenchymatous form of the disease; it is more in the acute parenchymatous, the cirrhotic, or the contracted kidney that the nervous symptoms predominate. Moreover, this individual has never had any asthma. This same dropsy—to return now to the dropsy with which we started—which is present here in the scrotum to such a degree as to interfere with micturition, as you see and as we have heard in his history, is present also in the course of time in the lungs, and from this cause the individual suffers from dyspnœa. We see asthma most marked, however, in those cases in which there is very little or no dropsy. That is the true renal asthma, nervous in its origin. We might say of the nervous symptoms that they show themselves in inverse proportion to the dropsy. Dropsical accumulations seem to serve the purpose of reservoirs into which the noxious elements are eliminated. Although the individual becomes helpless and suffers great distress by the occlusion of the lungs, it is merely a mechanical occlusion. The noxious elements find their escape not through the urine, but into the serous sacs and into the lungs. Other things being equal, then, we say that the immediate prognosis is rather more favorable in those cases which show us a great deal of dropsy. Sometimes, however, the dropsy causes serious phenomena, as when it swells up the vocal cords to occlude the air-passages, or sometimes it accumulates so greatly in the serous sacs and lungs as literally to drown the patient in his own fluids.

Many a patient will come to you to be treated, first of all, for dropsy. He will show you his feet. He will say that in the morning when he gets up the swelling is gone and he can walk, but that it comes again during the day. Other cases will have their attention first called to the disease by the œdematous condition of the lower eyelids. As a rule, however, the swelling first takes place about the feet. Sometimes you will be able to notice it about the loins, especially in individuals who are confined to their beds, though you may by no means explain the localization of the dropsy by gravity. If a man presents himself for your opinion with a sallow skin, with puffy eyelids, and says that he has headache, you at once examine his urine; at once you suspect Bright's disease. The amyloid kidney may also present some of these symptoms, but it generally shows no dropsy, or but little, throughout the entire course of the disease. In parenchymatous nephritis, however, it is the rule. The acute form, especially that following scarlet fever, shows it, and the chronic form always shows it. This great accumulation of fluid is characteristic of the acute and chronic forms of parenchymatous nephritis. You can generally distinguish between these two forms of the affection by the symptoms which accompany the dropsy. The fact that this individual has had the disease so long, that he has had few nervous symptoms, but has had great dropsy, even invading the lungs to such an extent as to render orthopnœa a necessity, bespeaks this form of the disease.

We might be willing to make a diagnosis and to rest our treatment upon these points alone, but there is a third cardinal factor—one which is equally important with any of any of the others and which is sometimes the sole index of the character of the affection. The urine is a fluid which comes directly from the seat of the disease. The quantity which is passed in this form of nephritis fluctuates. This man is now passing forty-four ounces of urine in twenty-four hours. He has passed as high as seventy-two ounces, however, as you have heard in the history. That was when his heart was strong in its hypertrophy. Three pints we say is the average quantity which a healthy man should pass in twenty-four hours. The specific gravity in this disease is high; it varies from 1.020 to 1.030—you might put down the average at 1.025. The first point to notice in connection with the urine is that it is generally reduced in quantity. With this reduction you would expect a change of color, it is darker, and it is also more or less turbid. Slight agitation produces froth. From this alone you might suspect that it would contain albumen, although this would by no means be a sufficient test. After the specimen has remained stationary for a little while there will be a sediment. This sediment is not the healthy sediment of urates; it has not the red color of the urates, but is of a whitish, muddy color. I now we put a little of this sediment under the microscope, we will find that it is made up of the detritus of blood corpuscles, much more of the white than red, and more especially of fat granules. After examining into the gross appearance of the urine the next thing is to inquire whether the urine contains albumen. We will subject a little of this specimen to the test of heat and nitric acid. We will have the urine boiled and then add a little nitric acid; if albumen is present, it will, of course, coagulate. If, however, there is a coagulation, does that necessarily mean that we have Bright's disease to deal with? By no means. We have a physiological albuminuria which is not connected with Bright's disease. There are certain other conditions which produce albuminuria. Pressure on the thorax will produce abundant albumen in the urine. The urine of a newborn child always con-

tains albumen, probably on account of an interference with the circulation of the blood in the thoracic cavity. Fever, and any retardation of the circulation will show it. I have said that there is a physiological albuminuria; so there is, but it is seldom encountered, is transitory, and the albumen is present, except in the pressure cases referred to, only in very slight quantity. Albumen in any quantity always indicates some disturbance of the epithelial cells of the kidney. These cells have the function of preventing the exosmosis of albumen; but if they become diseased in any way, only cloudy or opaque, they will permit the escape of albumen; you may put it down as a law that albumen in the urine in any quantity means disease of the kidney.

In executing the test for albumen, it is best to heat only the upper stratum of the liquid in order to discern by comparison the presence of only a small quantity; the boiling process should be continued at least one minute. Again, you should take a sample from all the urine that is passed in twenty-four hours, for in that space of time you will be more certain to find albumen if there be parenchymatous disease of the kidney. Sometimes, after heating—that is, boiling, I repeat, and adding nitric acid you will find that the contents of the entire test tube set into clot. You may then hear it stated that the urine was all albumen, or that it contained 50 per cent. of albumen. This is a mistake, for if it sets solid in the test tube, it indicates only 5 to 7 per cent. You must always take the precaution to add nitric acid to it as well as to boil it. It matters little which you do first, but you must always do both. Then, it is best to add quite a quantity of nitric acid—from one-tenth to one-fifth of the volume of urine to be tested.

There are a great many varieties of albumen. There is a serum albumen, there is a peptone albumen, a propeptone, and a globulin, and there are occasionally met other albumens which we are just beginning to recognize. Only two of them, however, have practical significance as yet; one is serum albumen and the other peptone albumen. The peptone albumen has nothing to do with Bright's disease. It never occurs in Bright's disease. It indicates to us that there is suppuration present somewhere in the body. It indicates to us sepsis that we can sometimes find in no other way. It is of value in the diagnosis of ulcers of the intestine, inflammations of the lung, and cerebro-spinal, as distinct from tuberculous meningitis.

There are many tests for albumen, but this heat and nitric acid test is sufficiently accurate if properly made. The mistakes which occur are for the most part in cases not examined at all. Boil the urine and see that it has an acid reaction; add plenty of acid.

The quantity of albumen is not indicative of the gravity of the disease. Most of the cases of acute parenchymatous nephritis or chronic nephritis show large quantities of albumen, but a case of cirrhotic kidney may disclose no albumen in even a dozen examinations, so that if you rely upon albuminuria only you will often be deceived. Suppose you have albumen, the question then is, Does this albumen come from the kidneys? Is the case one of renal albuminuria, or is it one of accidental albuminuria? Does it come from the kidney or from some other source? Does it come from the pelvis of the kidney, from the ureter, or from the bladder? Cases of accidental albuminuria distinguish themselves by the presence of pus, as a rule, and albuminuria due to affections of other parts distinguish themselves by the presence of epithelial cells from these parts, disease of which shows other signs. Albuminuria from the kidney is generally distinguishable by the great quantity of albumen as well as by the presence of tube casts, fat granules, and epithelial cells or débris. The presence of fat is valuable, but not so valuable as the presence of tube-casts. We have in most cases the granular, fatty, and epithelial casts, but in many cases we find only clear hyaline casts, such as are exhibited here under the microscope.

We have now interrogated this patient from three standpoints; namely, the nervous system, the dropsy, and the urine—the latter with reference to changes in its quantity, color, and composition. We find in it albumen, fat granules, and hyaline casts. The diagnosis is clear.

How Bright's disease came to attack this man we do not know. Some cases of chronic parenchymatous nephritis do follow the acute form of the disease, follow scarlet fever or some other acute infection, but only a small minority of cases are of this origin. Most cases are chronic from the start. The individuals begin gradually to suffer malaise. They feel low spirited, as a rule, suffer occasional headache and vertigo; then disturbances of digestion occur; and, finally, the patient presents himself to a physician, who examines his urine, to find in it the peculiar features mentioned, and be the first to recognize the disease. It is said that malaria and syphilis are diseases which often result in chronic Bright's disease. We know that individuals who suffer from malaria and syphilis are not infrequently affected with this disease; but you will find that most cases of Bright's disease cannot be ascribed to either of these affections, or to any cause, in fact, except to cold. Whether the cold is really the cause, or whether it is only the exciting factor acting with some other cause which existed previously in the body, we do not know. This much we know, however, that the microörganisms of the acute infections do not escape through the kidney, if the kidney be sound. They are not locked up in the kidney as they are in the liver, spleen, and bones. But they may be liberated from a latent state in these organs to affect the kidney at a later date, on or after long-continued or insidious exposure to cold.

The prognosis is always grave. We base our prognosis largely upon the length of time that the disease has lasted. If the individual has had the disease only a year, we may say that he has a good chance to recover. The average duration of the disease runs from a year to a year and a half. Many cases last longer under favorable hygienic surroundings, and some are cut short even in a few months. These patients are not so likely to die suddenly as those who suffer from the cirrhotic kidney. Patients sometimes fall down comatose in the latter affection, without having ever shown any symptoms of the disease. If you interrogate these cases, however, you will find that the individuals have been ill with vague feelings of distress, feeling below par, as they say, for some time; though not sufficiently so to take them to the office of a physician for advice. You must examine the urine in these cases. If necessary, draw it off with a catheter. A little albumen may be present in any case of coma, so that you

must look for fat granules and tube-casts, whereby you make your diagnosis. Look also in all cases for hypertrophy of the heart.

The prominence of nervous symptoms makes the prognosis grave. Fatty tube-casts, much fatty matter, will indicate a very pronounced form of the disease. The prominence of nervous symptoms is more apt to occur when the disease has passed over into the shrunken form—not into the true cirrhotic form, but into that shrunken condition peculiar to this form of the disease. The danger in this man's case is the increase of the dropsy over which we have so little control. He has twice had dyspnœa, from which he narrowly escaped. You heard in his history that the man has an enlargement of the heart. Some of the most brilliant diagnoses you will ever be able to make will be when you put your finger on a man's pulse and thereby be able to say that man has kidney disease. We find that the left ventricle is hypertrophied. We recognize it by the displacement of the apex beat, by percussion, by the firmness of the pulse, and by the accentuation of the aortic valve sounds. As long as these symptoms are present, there is no particular danger, but after awhile a time comes when the left ventricle begins to flag; the blood accumulates in the left ventricle, in the lungs, in the right ventricle, which flags in turn, and, finally, as the walls of the heart give way, the heart becomes fatty and flabby, and the individual soon succumbs. I give it to you as a sign of the utmost value, that in every case of chronic parenchymatous nephritis, you will find hypertrophy of the heart.

The prognosis in this case is very grave; but the patient has been almost as bad as he now is several times before and partially recovered. I am sure that every one of the older practitioners present have seen cases of Bright's disease quite as bad as this one that got better; but not, as a rule, to the point of a complete recovery.

What is the treatment here? You might naturally think that the proper treatment in such a case would be to push more water through the kidneys to wash out the tubules. So it would be if the tubules were open, but they are closed; they are plugged, and if you attempt to force more water through you will only increase the hyperæmia, stasis, and stagnation which are always present at this stage. In this case there is one diuretic which is indicated, namely, spartein, on account of the weakness of the heart. We shall give this patient one-sixteenth of a grain of the sulphate of a spartein every four hours, not for the disease of the kidney but for the heart.

This is not the true treatment of Bright's disease, however. It is, as a rule, the worst. The true treatment is to substitute the action of the kidneys by the action of the skin. The individual should have a hot bath every evening up to 110° F., remaining in it a long time, half an hour to an hour, then be rolled up in blankets and made to sweat. A patient who will do this right will often get entirely well. The man must have a large bath-tub made. He must have a thermometer in it. The temperature of the water must be kept up by the addition, from time to time, of hot water, beginning with 100° F., and gradually increasing to 110° F. This remedy, which proved to this man of the greatest advantage in the early part of this disease, is now valueless; his heart has become too weak for it. At one time I saw him after a bath, weak and almost pulseless. He was only tided over by hot coffee and brandy. Another most valuable agent in this case is pilocarpine, the active principle of jaborandi. It is given to him in the dose of a quarter grain, administered subcutaneously, increasing it, if it does not produce depression, to a third of a grain, or at times to a half grain. One-third of a grain shows its effect on this patient in fifteen to twenty seconds. He expectorates a half a basin full of saliva in the course of the ensuing half hour, and perspiration stands out in beads and drops, and rolls from his face in streams. He gets such complete relief from its use of the dyspnœa that he pleads for it at times. But pilocarpine is not as curative as the hot bath when it can be sustained. It is a substitute, and, like all substitutes, is not as good as the original. That we keep this patient in bed, and that we allow him no albuminous food need not be said. But with all the relief we may afford him we cannot at this stage sufficiently fortify his heart to prevent the dropsy. We have had subsequent occasion to incise his legs, whereby great quantities of water have found escape, and the persistence of this condition, in spite of all this treatment, shows how extensive is the block in the kidneys. In this operation incision with a bistoury is much to be preferred to punctures with a needle, in that it is less liable to show subsequent inflammation. It is no exaggeration to say that gallons of water have been drained from this patient in this way with corresponding relief of his dyspnœa, which is now his chief distress.

I give you thus the practical points as befits a clinical lecture bearing upon the recognition and treatment of chronic Bright's disease, and with special reference to this individual case. We may not be able to cure the disease in this case—indeed, I believe we will not, for I have come to make my prognosis rest largely upon the tolerance and effects of hot baths, which he cannot now endure. The symptom which now assumes prominence and most seriously threatens life is the dropsy due to the weakened heart. So soon as his stomach will bear it we will give him digitalis—the fresh infusion—in tablespoonful doses every two or three hours. We shall add to its efficiency by adding to it the acetate of potash fifteen grains to each dose. It is well to know, however, that with this addition the preparation does not keep so well, so that four to six ounces should constitute the maximum quantity made at any one time.

ORIGINAL ARTICLES.

FOUR CASES OF POISONING FROM TYROTOXICON, WITH THREE FATAL RESULTS.

INVESTIGATIONS AS TO THE ORIGIN OF THE POISON; RESULTS OF THE AUTOPSY AND CHEMICAL ANALYSES.

BY VICTOR C. VAUGHAN, M.D., PH.D.,
DIRECTOR OF THE HYGIENIC LABORATORY IN THE UNIVERSITY OF MICHIGAN.

SEPTEMBER 23, 1887, I was visited by Dr. A. G. Mesic, of Milan, Michigan, who informed me that he had four members of a family under his charge, all of whom were seriously ill with peculiar symptoms, which he believed to be caused by tyrotoxicon.

Since Dr. Mesic has written out for me the history of these cases, I will insert his report in full, as follows:

"*Saturday, September 17*, while passing the residence of S. H. Evans, a respectable farmer, I was called in to see him. I found him—a man of about fifty years, spare and muscular—vomiting severely, with flushed face, but with a temperature of 96° F. There was marked throbbing of the abdominal aorta; the tongue had a white, heavy coating, and the breathing was very labored. I set to work with the ordinary remedies to allay the vomiting, which had already continued for some hours. The vomited matters were colored with bile. Pupils were dilated, and a rash resembling that of scarlatina, but coarser, covered the chest, forearms, and legs below the knees, while the abdomen and thighs remained unaffected. As the bowels had not been moved since the beginning of the attack, I administered a purgative dose of calomel with a little podophyllin and rhubarb. On Sunday a small stool resulted. During that day and night, and the following day, the retching and vomiting continued. Small doses of carbolic acid seemed to give the most relief. After the movement of the bowels the symptoms were somewhat more promising; but a heavy and unfavorable stupor was observable and persistent.

"On *Sunday* the coating of the tongue remained very thick, and had changed to a dark brown color. At first I thought that his symptoms indicated a depressed condition, which I had known in one instance to precede typhoid fever. However, after a few days, I concluded that I must look for the cause of the condition among the poisons; but I could think of no one poison which would be likely to produce all the symptoms observed. During Monday, Tuesday, and Wednesday there was but little change, and the treatment was continued.

"On *Thursday* morning I found the son Arthur, a lad of eighteen years, strong and vigorous, suffering with the same symptoms, only in a more violent form. After supper on Wednesday evening, he was taken with nausea and vomiting. He had no rash, but the symptoms were otherwise identical with those of the father, except in being more severe. I gave a cathartic, which acted only slightly.

"At my evening visit I found Mrs. Evans, a lady of about forty-five, previously in good health, with the same symptoms. In this case the stupor was more marked from the first. I was unable at any time to obtain any cathartic action in this case. Copious enemata of warm water were used, but succeeded only in washing some hardened lumps from the rectum. By this time I had concluded that the poison was most likely tyrotoxicon.

"On *Friday* morning the only remaining member of the family at home, Miss Alma, sixteen years of age, was affected in the same way as the others. On that day I went to Ann Arbor, and gave a history of the cases so far to Dr. Vaughan, who, from the symptoms, thought that my diagnosis was most probably correct, and he advised with me as to treatment, which I carried out. I gave two grains of sodium salicylate every four hours, and used small doses of the tonics and stimulants, quinine, nux vomica, digitalis, whiskey, and the aromatic spirits of ammonia. On Saturday the symptoms in all remained unimproved, and in the mother and son the stupor and labored breathing grew more marked.

"On Sunday, I again went to Ann Arbor, and brought Dr. Vaughan with me to see the patients. The temperature of the mother on Sunday was as low as 94°, and that of the son 95°. Dr. Vaughan agreed with me as to diagnosis and treatment. Sunday evening the patients were all removed to the house of a neighbor, about forty rods distant (the reasons for this will be given later). Dr. Vaughan and I both expressed the fear that the mother, and possibly the son, would not live through the night. Both of these rapidly grew worse, and the son died at 7.45 A.M., and the mother at 4 P.M., Monday.

"During *Monday* the daughter rapidly grew worse, and at the time of her mother's death could not be aroused, and practically she remained unconscious from that time on. The father was very weak, but retained his consciousness all the time. Convulsive movements of the limbs had been noticed in the son, but not in the mother. These now became more marked in the daughter, who remained in the heavy stupor, with labored breathing, until 5 P.M. Thursday, when she died.

"Mr. Evans has slowly improved, and now, October 18th, is able to walk about the room. The sodium salicylate, even in the small doses used, seemed to cause severe headache; so apparent was this that the drug was discontinued, and drop doses of amyl nitrite, given every hour, seemed to relieve the pain in the head. The father's temperature remained below the normal until Thursday, October 14th, when it reached the normal. After this it was found once as high as 99.5°, then 99°, then again normal, where it remains."

"All complained of a burning constriction in the throat, and difficulty in swallowing, and all, as long as they were conscious, frequently called for ice. In all the pulse was rapid and feeble, and death seemed to result from failure of the heart. Those who died voided urine involuntarily, while Mr. Evans passed small quantities frequently, and for this some buchu and uva ursa were given. During his convalescence some small doses of morphine were given to the father, as he was unable to sleep, and became very restless. He is now taking teaspoonful doses of the elixir of calisaya and iron every four hours."

As stated above by Dr. Mesic, I first saw these patients Sunday, September 25th. On a sofa in the room we found the daughter, Alma. She had been vomiting during the day, and seemed much exhausted. She was not inclined to talk, and seemed to be in a stupor, though when spoken to, she responded rationally. Her pupils were slightly dilated, her tongue coated, her pulse 120 and weak, her face flushed, and a violent throbbing could be felt over the abdomen, which was retracted. Her temperature was 96°.

In another room were the father, mother, and son, two of them dying. The father was rational, and talked with some freedom when I asked as to the kind of food they had been eating, etc. His pupils were normal. His face could not be said to present any peculiar feature. His pulse was rapid, breathing somewhat labored, and the throbbing of the abdominal aorta was plainly felt. The abdomen was retracted, and there was no pain on pressure. He complained of a burning constriction of the throat, swallowed with difficulty, and said that his throat and stomach felt as though they were on fire.

The mother lay perfectly still with eyelids closed, as if in a deep sleep. Her pulse was rapid, her face had a livid flush, her breathing was about 35 per minute, and labored. The skin was cool, but neither abnormally moist nor specially dry and harsh. She could not be aroused. In fact, she was comatose.

The son rolled uneasily from one side of the bed to the other. His breathing, also, was very labored.

His eyelids were closed, and the pupils were markedly dilated—did not respond to light. He could not be aroused. In mother and son, as well as in father and daughter, the abdomen was retracted, and the throbbing of the abdominal aorta was easily felt.

Now, to what were these symptoms due? They were certainly those of some poison. Dr. Mesic had brought me some of the vomited matter, which I tested thoroughly for mineral poisons, with negative results. The symptoms certainly were not those of morphine, strychnine, digitalis, or aconite. They did have some resemblance to those of belladonna, but yet they were not the symptoms of belladonna. The pupils were not as widely dilated as they would be in belladonna poisoning. There was in none of these persons the active delirium of belladonna poisoning. There was no picking at the clothing, no grasping of imaginary objects in the air, no hallucinations of vision. Surely it could not be any vegetable alkaloid with which I was familiar.

On the other hand, we know that nausea, vomiting, headache, dilatation of the pupil, rapid pulse, heavy breathing, constipation, and great prostration, with stupor, do occur in cases of poisoning with certain ptomaines. Therefore, we began to look for conditions which would be favorable for the production of putrefactive alkaloids. These conditions we were not long in finding.

The family, which consisted of the four persons sick, and of a daughter, about twenty years of age, who was away from home at the time when the others were taken ill, and for some months before that time, was evidently a tidy one. This was shown by their personal appearance, and by the clothing and bedding. But the house in which they lived was very old and very much decayed. Mr. Evans had purchased the farm six years ago, and for some three years past, at least, they had been troubled every now and then, one or more of the family, with nausea and vomiting, followed by more or less prostration. But in no instance, up to the present illness, had the symptoms been sufficient to cause them to summon a physician. The family had worked hard in order to pay for the farm, and had determined to make the old house do until they were out of debt. Even before this family had moved to the farm, the house had been known among the neighbors as an unhealthy one, and there had been much sickness and a number of deaths among its former tenants.

The house is a frame one, and one of the neighbors said to me that it was an old house when he came to the neighborhood thirty-seven years ago. It consists of two rooms on the ground-floor, with attic rooms above. The frame rests upon four large logs or sills, which lay directly upon the ground, and are thoroughly rotten. There is no cellar under any part of the house. From the front, at least, the surface slopes toward the house, and the rain water runs under it. In the floor of one room a trap-door had been placed, and directly under this a small excavation had been made for the purpose of collecting the rain water when it accumulated under the house. Although this pit was dry at the time of our examination, its sides and bottom were marked with cray-fish holes, showing that water had stood in it. The floor was laid of unjointed boards, and every time that it was swept much of the filth fell through the cracks, and everytime that the tidy housewife scoured and mopped the floor, the water, carrying with it the filth, ran through the crevices, and thus the conditions most favorable for putrefactive changes were brought into existence, and maintained.

One corner of one of the rooms had been transformed into a small room, or buttery, as it was called, and in this, on shelves, the food was kept. On account of the more frequent scouring demanded by that part of the floor enclosed in this buttery, the boards had rotted away, and a second layer of boards had been placed over the original floor. Between these two floors we found a great mass of moist, decomposing matter, the accumulations of years, which the broom could not reach. When this floor was taken up a peculiar, nauseating odor was observable, and was sufficient to produce nausea and vomiting in one of the persons engaged in the examination. Some of the dirt from beneath the floor, and some of that which had accumulated between the boards in the buttery were taken for further study.

The condition of the house was supposed to be unfavorable to the patients, and for this reason they were moved, as Dr. Mesic has stated, to the house of a neighbor. Of course, thorough examination of the house was not made until the patients had been removed.

Special inquiry was now made concerning the food used by this family. They had been living very simply. They lived upon bread, butter, milk, and potatoes, with coffee and ripe fruit. They had eaten no canned foods for months. They ate but little meat. Occasionally a chicken was killed and served, and rarely, some fresh meat was obtained from the village. During the week in which they were taken ill, all the meat used consisted of slices from a piece of bacon, the only meat which was kept in the house, and a chicken. None of the latter remained, but the bacon was examined. It seemed in perfect condition and contained no trichinæ. Moreover, as has been seen from the history of the cases, all the members of the family were not made sick by any one meal, but the opportunity of obtaining the poison must have been present for some time. Moreover, the fact that previous similar, but less severe attacks had occurred at intervals for the past three years convinced us that the poison must owe its origin to some long existing condition.

The drinking water supply was also investigated. The water was obtained from a shallow well, and some of it was taken for analysis. But several families had for years used water from this well, and had remained healthy.

The milk used by the family was studied. Of course, we could get none of that which had been used before the members of the family were stricken down. As soon as he made the diagnosis of tyro-

toxicon poisoning, Dr. Mesic ordered the discontinuance of the use of mlik, not only with the sick, but he forbade the daughter, who had returned, and any of the visitors using it. Mr. Evans owned four milch cows and they were supplied with fair pasturage and abundant water. The greater part of the milk was placed in tin cans which were set in a wooden trough in the yard, and surrounded by cold water. The covers to the cans were arranged so that the air could have free access to the milk, and were left in this position until the milk was thoroughly cooled. Indeed, the cans were furnished by a creamery company, which followed the directions which I have previously given for the care of milk. On his first visit to me, Dr. Mesic brought some of the milk from one of these cans. This I examined, but failed to find tyrotoxicon in it.

However, the family did not drink any of the milk from the cans. That which they did use was kept in the buttery which I have described. Here it stood upon a shelf and some members of the family at least were in the habit of drinking from it between meals. This was especially true, it is said, of the son. He would frequently come from his work in the fields, go into the buttery and drink a glass or more of the milk. Mr. Evans states that he frequently observed that the taste of the milk was not plea-ant. On my first visit to the premises, I advised that some milk should be taken from the cans, allowed to stand in the buttery over night and be sent to me the next day. This was done and in this milk we found tyrotoxicon not only by the employment of chemical tests, but by poisoning a kitten with it.

On the death of the mother and son, Dr. Mesic asked for a post-mortem, but the friends objected, and the undertaker used an arsenical embalming fluid, so that, although consent was subsequently obtained, it was decided that the examination would be so vitiated as to be worthless. On the death of the daughter, Dr. O. C. Jenkins, the coroner, summoned a jury and held an inquest. The post-mortem was conducted by Dr. George A. Hendricks, in the presence of the jury and several physicians who had been invited. Dr. Hendricks has kindly furnished me with his report, which I present here in full:

"The autopsy was held fifteen hours after death. The abdominal viscera were first examined. The great omentum was small, in normal position, covering the small intestine. The small intestine was moderately distended with flatus. The jejunum was ashy-green in color; the ileum purplish-green. About eighteen inches from the termination of the ileum was found a diverticulum two inches in length. The small intestine contained very little alimentary matter. The vermiform appendix was free, contained some small fecal lumps, and showed no evidence of any inflammation. The cæcum, ascending, transverse, and descending colon, were empty and their circular fibres were tightly constricted, except at intervals where the intestine was distended with gas. The sigmoid flexure was moderately distended with gas, and the rectum contained small bits of fecal matter. The stomach was somewhat contracted and lay wholly upon the left side of the median line. It contained a few ounces of fluid. Its extremities were ligated and the organ removed. The mucous membrane of the stomach and intestine were not examined until they reached the chemist. The duodenum was distended with flatus. The liver was normal in size and appearance. The gall-bladder contained about one ounce of bile. The spleen was normal. One-half ounce of fluid deeply stained with blood was found in Douglas's cul-de-sac. The uterus, Fallopian tubes, and ovaries were deeply congested. The left ovary was enlarged and presented on its posterior surface a hemorrhagic spot, oval, about one-half line in length, and several other less distinct ones. The right ovary was normal in size and showed numerous Graaffian scars. The ureters and bladder were normal; the latter contained a small amount of urine. The peritoneum, pancreas, and kidneys, were perfectly normal.

The thoracic cavity was next opened. The lungs were normal; there was about one-half ounce of free serum in the left pleural cavity; none in the right. Pericardium normal; right auricle in diastole; left auricle and both ventricles in systole.

The dura mater showed venous congestion; the arachnoid normal; the pia-mater congested. On the surface of the centrum ovale, small drops of blood oozed from the divided vessels. The large veins of the velum interpositum were distended. Third and fourth ventricles were slightly distended with serous fluid, but the walls were normal. There seemed to be slight softening of the optic thalami. The sub-arachnoid fluid was about twice the normal quantity.

On examination of the mucous membrane of the stomach and intestine in the presence of the chemist, Prof. A. B. Prescott, nothing abnormal could be found. The membrane was stained with bile, but there was not the slightest redness The solitary glands were distinct, but not at all inflamed. Peyer's patches were normal.

It will be seen that there existed no lesion which would account for the death. The venous congestion observed in the brain would follow from failure of the heart.

Some of the post-mortem appearances bore a striking resemblance to those which I had observed in cats poisoned with tyrotoxicon. This was especially noticeable in the condition of the mucous membrane of the stomach and intestine. Tyrotoxicon produces the symptoms of a gastro-intestinal irritant, but not the lesions. The contraction of the circular fibres of the intestine, which undoubtedly caused the constipation, I had also observed in cats that died from tyrotoxicon poisoning without either vomiting or stool. The action of this poison upon the stomach and intestine must be through the nervous system. Small doses cause both vomiting and purging, while after large doses vomiting may be impossible, and obstinate constipation may exist. Both the vomiting and purging after small doses are undoubtedly due in part to increased activity of the circular fibres of the muscular coats, induced through the nerves; and the inability to vomit, and the constipation, one or both of which may be observed after large doses of the poison, are due to spasm of the same muscles, induced in the same manner.

Prof. A. B. Prescott was requested by Coroner Jenkins to analyze the material for mineral and vegetable poisons. He made analyses of the stomach and part of its contents, and a portion of the liver. His results were wholly negative.

Mr. F. G. Nooy tested a cold-water extract of the

finely divided intestine for ptomaines. The fluid, which was acid in reaction, was filtered, then neutralized with sodium bicarbonate, and shaken with ether. The ether, after separation, was removed, and allowed to evaporate spontaneously. The residue was dissolved in water, and extracted again with ether. This ether residue gave the chemical reactions for tyrotoxicon, and a portion of it was administered to a kitten about two months old. Within half an hour after the administration the kitten began to retch, and soon it vomited. Within the next three hours it was noticed to vomit as many as five times. The breathing became rapid and labored. The animal sat with its head down, and seemed greatly prostrated. The pupils were examined, but could not be said to be dilated. There was no purging. The retching and heavy breathing, with evidences of prostration, continued more or less marked for two days, after which the animal slowly improved.

A quantity of fresh milk was divided into five portions of one quart each, placed in quart bottles which had been thoroughly cleansed, and treated in the following manner:

No. 1 consisted of the milk only, and was employed as a control test.

No. 2 was mixed with a drachm of vomited matter.

No. 3 was treated with a portion of the contents of the stomach.

No. 4 was treated with an aqueous extract of the intestine.

No. 5 was treated with a small portion of the soil, which had been taken from the floor of the buttery, stirred up with water.

These bottles were placed in an air-bath, and kept at a temperature of from 25° to 30° C. for twenty-four hours. Then each was tested for ptomaines. No. 1 yielded no tyrotoxicon, while all of the others contained this poison. The tests were both chemical and physiological. All of the samples yielded a non-poisonous base when treated according to Brieger's method, and the same substance was obtained from perfectly fresh milk. It is most probably formed by the action of the heat and reagents employed in this method. This base was obtained in crystalline form, and several portions of it were administered to kittens without any effect. The urther study of this body will be of interest to toxicologists, because it gives many of the general alkaloidal reactions. At first we supposed it to be Brieger's neuridin, and this supposition may still be correct, but, as we obtained it, it gave some reactions which are not given by neuridin. Further investigations will be made on this point.

Tyrotoxicon was obtained from the filtered milk by two methods: (1) The one which we have previously used, and which consists in neutralizing the filtered milk with sodium bicarbonate, and extracting with ether. That portion of the poison employed in the physiological tests was obtained in this way, and in order to be sure that no poison came from the ether, the extract from the milk to which nothing had been added was given to a kitten, and was found to produce no effect. (2) The filtrate from the milk was heated to 70° C. (158° F.) (tyrotoxicon decomposes at 91° C. (195.8° F.)) for some minutes, and filtered. This filtrate, which was perfectly clear, was treated with a small quantity of nitric acid in order to convert the tyrotoxicon into a nitrate, then pure potassium hydrate in the solid form was added until the solution was strongly alkaline. This solution was concentrated so far as it could be, on the water-bath. (The potassium compound of tyrotoxicon is not decomposed below 130° C. (234° F.)). The dark brown residue, after cooling, was examined with the microscope and found to contain the crystalline plates of tyrotoxicon-potassium hydrate, along with the prisms of potassium nitrate. The former was separated from the latter by extraction with absolute alcohol and filtration. The alcohol was evaporated to dryness on the water-bath, and the residue again extracted with absolute alcohol. From this alcoholic solution tyrotoxicon was precipitated with ether. The precipitate was decomposed by adding acetic acid and heating, the tyrotoxicon being broken up into nitrogen and phenol. The phenol was recognized by precipitation with bromine water, and by other well-known tests.

On October 8th, the coroner's inquest, which had been adjourned after the *post-mortem*, in order to await the results of the analysis, was resumed, and after hearing the testimony in accordance with the above stated facts, the jury returned a verdict of death from poisoning with tyrotoxicon.

Ehrhart has recently published the history of some cases of poisoning from cheese, of which the following is an abstract: The family of a workman, consisting of eight persons, ate for supper 600 grammes (about 18 ounces) of Limburger cheese. The rind was covered with a heavy mould, while the interior had become fluid from putrefaction, and was of bitter taste. Three ate only of the mouldy rind, and these remained well. The next morning, the five who had eaten of the inner portion suffered from vertigo, nausea, vomiting, and abdominal pains; no stool. The father had convulsive movements of all the extremities. The pupils were dilated, and did not respond to light; there were double vision, cold sweat, skin cyanotic, abdomen distended, difficulty in swallowing, delirium, mild trismus, and temperature 40° C. (104° F.). The temperature of the mother, on account of the great collapse, was subnormal. She had no convulsive movements, but there was prolonged loss of consciousness. The pulse was small and thready, and threatened paralysis of the heart. Recovery was very slow. The others suffered only from gastro-enteric symptoms. Ehrhart discussed the question as to whether these symptoms were due to tyrotoxicon, or to infection with microorganisms; but as I have not had access to his original paper, I do not know what his conclusions are. (*Schmidt's Jahrbücher*, B. 213, S. 248.) However, there cannot be much doubt that in those cases in which the organism is taken into the alimentary canal, it continues the elaboration of its poisonous products.

There is one other point to which I will only refer at this time. It seems now that small doses of tyrotoxicon, especially when repeated, elevate the

temperature. This is probably due to peripheral irritation, which is a common cause of elevation of temperature. On the other hand, fatal doses cause depression of temperature from collapse.

REPORT OF A CASE OF WLADIMIROFF-MIKULICZ OSTEOPLASTIC RESECTION OF THE FOOT.[1]

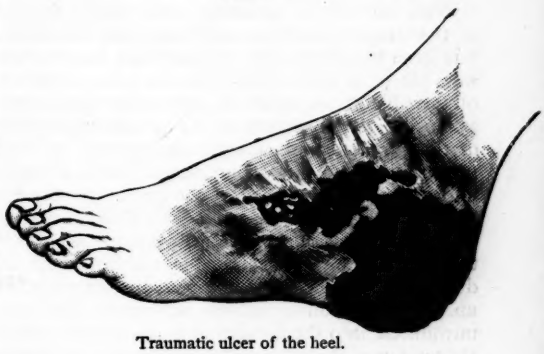
BY WM. BARTON HOPKINS, M.D.,
SURGEON TO THE EPISCOPAL HOSPITAL, PHILADELPHIA.

THE operation which is the subject of this report was originally designed by a Russian, Dr. W. D. Wladimiroff in 1871, but as he published the account of it in his own language, it was not known out of Russia until nine years afterward. In 1880 Dr. John Mikulicz, of Vienna, performed the same operation and published it as his own device, not knowing that it had ever been done before.

Wladimiroff called it the operation for the production of artificial pes equinus; Mikulicz, the osteoplastic resection of the foot. The toe-stump operation would probably still better distinguish it. It consists essentially in removing the entire heel and ankle-joint and applying what remains of the foot to the leg in a position of pes equinus, so that the patient walks on his toes. The conditions for which it has been performed are (1) caries of the larger tarsal bones, and (2) extensive loss of the tissues about the heel, either from disease or injury. For the relief of the former it has been almost exclusively practised, and a number of excellent results have been obtained, though there is, of course, the risk of the disease attacking the remaining bones and causing relapse. To the latter class of cases, though of these there are as yet but few examples, it will probably prove more particularly applicable, as in them the tissues involved preclude the conservative operations of Chopart, Pirogoff, and Syme, and leave no alternative but amputation of the leg. Should further experience confirm the observations so far made, that this operation is followed by decidedly better functional results than amputation, its future scope will probably include many cases of railroad, gunshot, and the like injuries, where the parts destroyed correspond with those which by it are removed.

There have been twenty-one cases recorded within the past seven years. Most of these have been successful and most of them for caries. The case reported this evening is only the second in which the operation has been done for injury of the tissues about the heel. The patient's history is as follows: Wm. D., aged thirty-seven, born in Scotland, a strong, healthy man, was admitted to the Episcopal Hospital November 16, 1886. Two months before his admission he had been run over by a freight car. The wheel had passed over his left foot, tearing away the tissues of the heel down to the bone, laying bare the extensor tendons of the toes and leaving an isthmus of sound integument upon the dorsum of the foot not wider, according to the patient's recollection, than an inch and a half. During his stay in the hospital of nearly four months, the ulcer, for which he was admitted, obstinately refused to heal. Its cicatricial border having advanced to the utmost limit of its tensile strength, would repeatedly break down, so that all efforts to facilitate healing failed. The accompanying cut, taken from a photograph of the foot at the time of the operation, shows accurately the position of the ulcer and cicatrix on the outer side. On the inner side the ulcer did not extend quite so far forward. The operation was

FIG. 1.



Traumatic ulcer of the heel.

performed with proper antiseptic precautions, March 8, 1887.

The patient, after etherization, was placed upon his abdomen; the sound leg was flexed upon the thigh and held out of the way by an assistant. The injured foot having been cleansed, was elevated upon a block placed beneath the rubber cloth and a constant stream of sublimate solution from the irrigator directed upon it during the two hours and three-quarters occupied by the operation.

The first step consisted in dissecting out the posterior tibial nerve. An incision started behind the inner malleolus was carried obliquely downward and forward below it to a point below Chopart's joint. The nerve was found to be so deeply imbedded in newly formed, very dense fibrous tissue, that it was dissected out with some difficulty. It was then divided at the upper and lower angles of the wound, about two inches of its length being removed.

The second step in the operation consisted in forming the flaps. These had to be slightly modified by the form of the ulcer, in order that their edges should consist of moderately healthy skin; in most respects, however, the limits of the ulcer corresponded with rather remarkable accuracy to the prescribed lines of incision. The first incision was carried across the sole of the foot, down to the bone, from the tubercle of the scaphoid on the inside to a point a finger's breadth behind the base of the fifth metatarsal bone on the outside; and the second straight across the back of the ankle half an inch above the os calcis, from the external angle of the sole incision to the upper angle of the tibial nerve incision.

The third step consisted in the resection of the astragalus and os calcis, and the shaving off of the lower ends of the tibia and fibula and posterior sur-

[1] Read before the College of Physicians of Philadelphia, November, 1887.

faces of the scaphoid and cuboid. Disarticulation of the astragalus at the ankle-joint was done from behind forward; of the os calcis at its cuboid joint, and the astragalus at its scaphoid joint from below upward. Due care was taken not to injure the dorsalis pedis during the last-mentioned disarticulation, as the position of the ulcer necessitated the division and ligation of the posterior tibial artery in forming the flaps.

The last step in the operation included the approximation of the bones, divided nerve and tendon ends, and the closure and dressing of the wound.

With the view of obtaining more perfect fixation of the tarsus to the tibia and fibula than has heretofore been found possible, two sterilized bone dowels were placed in holes drilled into the lower extremity of the tibia at points which corresponded as nearly as possible to the centres of the presenting surfaces of the scaphoid and cuboid; the insertion of their projecting points into these bones being deferred until the final adjustment of the parts. A very fine catgut suture was so placed in the divided and retrenched ends of the posterior tibial nerve as to bring these ends into very accurate apposition without undue pressure. The slack, however, was not yet taken up. In like manner sutures of stronger gut were introduced into the divided and retrenched ends of the tendon of the peroneus longus, about three inches of which were excised, and into the divided end of the tendo-Achillis, and the edge of the plantar fascia exposed in the lower flap. These sutures were all allowed to remain slack until the foot should be brought into its new position. Moderate pressure was sufficient to accomplish this and to impale the tarsal bones upon the sharp-pointed dowels. With the foot firmly retained in this position, the extremities of the nerve were brought accurately together and sutured. The tendon of the peroneus longus was likewise sutured and the terminal extremity of the tendo-Achillis stitched to the edge of the plantar fascia. The introduction of drainage catgut and suturing the skin flaps with catgut completed the approximation of the parts. A dressing of gauze, iodoform, and sublimate cotton was applied and the limb was placed upon a straight posterior splint. The latter was in three days substituted by a plaster-of-Paris double dressing, the foot and leg sections being connected by an iron bracket anteriorly in order to leave ample room for washing and dressing the wound. Five weeks later a small ulcer remained, but union of the deeper parts was complete and consolidation of the tarsal and leg bones was found to have begun. The patient at this time complained of tingling in the toes accompanied by occasional shooting pains, and there was partial anæsthesia of the sole of the foot. Sensation gradually returned, and is now restored except over a very limited area.

Three months after the operation, under ether, the toes were extended to a right angle; to accomplish which moderate force only was required. Since then there has been nothing to note. The limb continues to gain in strength and the patient can now, with a cane, walk four miles a day. He has had the braced shoe which he wears but two weeks, and has, therefore, not yet had time to become thoroughly accustomed to it. He walks well without a cane, while with one, when not fatigued, he shows hardly a limp. This cut represents the limb after the operation, and was engraved from a photograph on the block.

FIG. 2.

Artificial pes equinus.

Two modifications of the operation, as practised in this case, deserve mention, namely: the employment of bone pegs or dowels to fix the tarsal bones to the tibia, and the suturing of the divided and retrenched tendons. The dowels provided proved rather too light to make the joint firm and immovable, but they were nevertheless used, as heavier ones were not at hand. Perfect fixation of the tarsus and leg at the outset, by lessening suppuration, by promoting early bony union, and by obviating the necessity of such carefully applied outside support, would seem to be an important factor in the after-treatment of the operation. The dowels should be three-sixteenths of an inch in diameter and three inches in length. They may be sunk two inches in the tibia and one inch in the tarsus. Holes need not be drilled for them in the latter, as their sharp points readily penetrate the cancellated structure of these bones. Uniting the severed tendons has, without doubt, added to the function of the foot in this case. Though suggested in THE MEDICAL NEWS editorially, it does not appear to have been attempted before. The plantar fascia was chosen as a strong accessible point to which to attach the tendo-Achillis instead of the tarsal periosteum, as suggested in THE NEWS.

Within the narrow limits of motion which now remain, the patient can flex, as well as extend the foot. The motion is partly tarso-metatarsal, and partly tarso-tibial. The latter is diminishing, and the braced boot which he wears may probably be cast aside within one year.

The following table includes, it is believed, all the operations which have been performed, with the exception of five Russian cases reported incidentally by Sklifossowsky. The first nineteen cases are taken from the table of Zesas.[1]

[1] Archiv für klinische Chirurgie, 1886, Bd. 33.

TABLE OF OPERATIONS.

No.	Operator.	Year.	Age.	Cause.	Result.	Authority.	Remarks.
1	Wladimiroff,	1871	15	Caries.	Recovery.	Aus den Arbeiten der Gesellschaft der Aerzte der Stadt Kasan, 1872.	Patient walked very well without cane.
2	Mikulicz,	1880	23	Syphilitic ulcer.	Recovery.	Archiv für klin. Chirurgie, Bd. 26.	At the end of four months patient walked with cane and boot, while in eighteen months did hard work, and could walk one hour.
3	Socin,	1881	22	Caries.	Recovery.	Jahresbericht über die chirurgische Abtheilung das Spitales zu Basel, 1881–82.	After two months used cane and worked in the field; no relapse after two years.
4	Mikulicz,	1881	27	Caries.	Recovery.	Centralblatt für Chirurgie, 1884.	Patient, with boot, could walk quite far, but without it had to use a cane; six months afterward died of pulmonary tuberculosis.
5	Sklifossowsky,	1882	30	Caries.	Recovery.	Bull. de la Société de Chirurgie de Moskou, 1882.	Patient did well.
6	Haberern,	1882	18	Caries.	Relapse.	Verhandl. der Deutschen Gesellschaft für Chirurgie, 1884.	Amputation of the leg, after five months, from which he recovered.
7	Mikulicz,	1883	16	Caries.	Recovery.	Centralblatt für Chirurgie, 1884.	Patient walked in six months with boot; without it had to use a cane.
8	Lauenstein,	1883	32	Caries.	Recovery.	Ibid.	Patient died in eight months of what appeared to be pulmonary tuberculosis.
9	Lauenstein,	1883	25	Caries.	Recovery.	Ibid.	Patient could walk four hours at a time, and without boot could step firmly upon his foot.
10	Mikulicz,	1883	?	Caries.	Recovery.	Verhandl. der Deutschen Gesellschaft für Chirurgie, 1884.	Patient walked well with cane.
11	Roser,	?	?	Caries.	Recovery.	Fischer: Deutsche Zeitschrift für Chirurgie, xxiii. S. 164.	Functional result excellent.
12	Kümmell,	1884	38	Caries.	Relapse.	Centralblatt für Chirurgie, 1885.	After four months resection of the rest of the tarsus, part of the metatarsus, and a portion of the tibia and fibula.
13	Schattauer,	?	10	Caries.	Recovery.	Ibid.	Patient, with boot, could walk many hours without fatigue.
14	Renssen, (Ranke's Clin.)	1884	?	Deformity resulting from fracture.	Recovery.	Ibid.	Seven and a half months after operation patient walked well with boot; 3¼ cm. shortening.
15	Schattauer,	1884	9	Caries.	Relapse.	Ibid.	Five weeks after the operation amputation of the leg; recovered.
16	Fischer,	1884	18	Caries.	Relapse.	Deutsche Zeitschrift für Chirurgie, xxiii. 1 u. 2 Heft.	Resection of second and third cuneiform bones and remainder of cuboid; recovered. At the end of a year patient walked well with boot and cane; could go up stairs.
17	Niehans,	?	50	Injury of heel.	Recovery.	.....	Very good functional result. Without boot or cane became easily fatigued.
18	Sordina,	1885	20	Caries.	Gangrene.	Centralblatt für Chirurgie, 1886, No. 3.	Amputation at the lower third of the leg.
19	Sordina,	1885	11	Caries.	Recovery.	Ibid.	Very good result.
20	Gutsch,	1886	13	Caries.	Recovery.	Archiv für klin. Chirurgie, Bd. 34, 1886.	Resection included parts of all the cuneiform bones and seven centimetres of the tibia and fibula; function completely restored.
21	Fenger,	1886	29	Caries.	Recovery.	Journal of the Amer. Med. Association, vol. viii., Jan. 1887.	Fifteen months after the operation can walk without boot and cane, and bear the whole weight on the foot; solid ankylosis; lengthening 5 cm.
22	Hopkins,	1887	37	Traumatic ulcer.	Recovery.	.....	After eight months can walk four miles with cane and boot; limited motion under voluntary control in flexion as well as extension; about ¾ inch lengthening.

THE APPEARANCE OF A LARYNX NEARLY TWENTY YEARS AFTER THE EXTIRPATION OF AN EPITHELIOMA BY EXTERNAL ACCESS.

BY J. SOLIS COHEN, M.D.,
OF PHILADELPHIA.

ON February 25, 1868, in the presence of the late Professor S. D. Gross; of the patient's physician, the late Dr. John L. Atlee, of Lancaster; the late Dr. Elsberg, of New York; Dr. R. J. Levis, and others, I removed, under chloroform, from the larynx of a gentleman, thirty years of age, a large portion of his left vocal band and the entire lining membrane of the left ventricle, together with masses of morbid growth; portions of which, removed by intralaryngeal procedures, had been pronounced to be epithelioma by the most competent microscopists of the day in Philadelphia and in Washington.

I had been using chemical cauterization, had been removing fragments, piecemeal, with forceps, sawing them off with knives and electric cautery; but on finding the bulk of the tumor increasing, despite the removal of masses, which, in the aggregate, exceeded the bulk of the neoplasm when first detected, I determined to cease these efforts. So I performed a precautionary tracheotomy, and, subsequently, split the larynx externally, removed the growths with cutting instruments and forceps, scraped out the lining membrane of the ventricle, and seared all the raw tissues with a solution of acid nitrate of mercury (33⅓ per cent.).

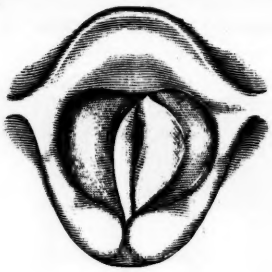
When examined microscopically, the masses removed were pronounced to be epithelioma.

The patient did well, and some months later, there having been no recurrence, I removed the tracheal canula. This case was reported in the *Medical Record*, p. 244, July 15, 1869; and in my treatise on *Diseases of the Throat*, 1872. In the second edition of the treatise (1879) I intimated that as the patient had survived the operation so long without recurrence, I felt that, despite the microscopic evidence, I had been dealing not with an epithelioma but with a benign growth.

Finding that the patient was free from laryngitis only when in a warm and equable inland climate, I advised him to fix his residence permanently in a locality which I selected. This advice was taken. Its wisdom has been emphasized by the fact that every summer visit to Pennsylvania has excited hoarseness and some amount of inflammation of the mucous membrane, from both of which conditions perfect immunity has been experienced while the patient remains in his home of expatriation.

A few weeks ago the patient called upon me hoarse with a laryngitis, and somewhat worried by recent newspaper gossip. Upon relief from the laryngitis his voice became excellent, better than I had ever heard it, and not sufficiently harsh to attract attention. His voice, at home, he has told me at previous visits, "could be heard a mile along the railroad track," so it must be perfectly satisfactory.

Believing that a picture of the larynx at so late a date would be interesting, I requested my colleague, Prof. Watson, of the Polyclinic, to use his skill in preparing it.



It will be seen that a compensatory tissue doing service as the left vocal band, has been formed at the expense of the inferior wall of the ventricle, which has been in great measure obliterated by the eversion.

As acknowledged in my report of the case (*loc. cit.*, p. 245), I feel indebted for much of the success to a whispered suggestion from Prof. Gross, after removal of the tumor and staunching of the hemorrhage, that I should take the sharp edge of the heel tip attached to the handle of my bistoury and scrape out the entire ventricle; and thus, in his forcible language, remove "the very atmosphere of the disease."

AN OBSCURE CASE OF UNCONTROLLABLE EMESIS; LAPAROTOMY; DEATH.

BY WILLIAM T. SMITH, M.D.,
PROFESSOR OF PHYSIOLOGY IN DARTMOUTH MEDICAL COLLEGE, N. H.

ON the 12th of August, Maggie M., a domestic, eighteen years of age, consulted me at my office for a disordered stomach, with vomiting. I gave a simple remedy and did not see her again for a week, when she came, saying that the vomiting had not ceased and she was no better. Two days later I was called to see her at her house, and then I learned the following history of the case.

About a year ago she had a short sickness, with bloody discharges from her bowels. From that time she was subject to frequent attacks of headache and vomiting. The headaches, after a time, ceased, but the attacks of vomiting persisted. They came as often as once in ten days, the longest period of immunity being one period of three weeks. The bowels, which had been regular in their action, became from the time of the first attack very costive. She would go a week without a movement. Her menstruation became somewhat irregular. Except that she was constipated, she was perfectly well between the attacks of vomiting, and worked steadily. These, when they came on, lasted a day or part of a day, and then she would be entirely relieved.

At the time when I was called to her house, she had been vomiting two weeks. She had no fever, a pulse of about 80, no pain, no local soreness, no tympanites. I could find no tumor of any description in the abdomen. Her bowels had moved slightly within a few days. I examined the uterus thoroughly and the adjacent tissues, but found nothing abnormal. The urine was normal. There were

no symptoms of disturbance of nerve centres. I gave enemata, but got only slight liquid discharges for three days. I then gave three compound cathartic pills. For the next twelve hours her vomiting was copious and distinctly fecal. After the effect of the pills had ceased, the fecal character was less marked, but it continued in a greater or less degree to the end. Professors E. S. Dunster, C. P. Frost, and Charles B. Nancrede, saw and examined the patient. She was fed by the rectum, and various methods were assiduously tried to check the vomiting, but in vain. Laparotomy was discussed, but postponed from day to day on account of the lack of definite local symptoms, and because there was repeatedly a discharge of liquid fecal matter per rectum, proving that no complete obstruction existed.

Obturator hernia was excluded by the absence of signs on examination. After ten days had elapsed since I was called to her bedside, and more than three weeks since the vomiting began, it was decided that laparotomy, as the last resort, offered the only chance, and that a slight one, of recovery. Dr. Nancrede performed the operation, assisted by Dr. Dunster. The strictest antiseptic precautions were observed. An incision four inches long permitted the introduction of the hand, and careful search was made for obstruction. None was found, though there was a suspicious narrowing of the gut in a portion of its course. The incision was closed. The patient recovered promptly from the ether, and there were no symptoms of shock. She rallied well from the operation and lived through the night, but died the next morning.

At the post-mortem, a portion of the ileum about one inch long, five feet from the ileo-cœcal valve, was found to be narrowed, apparently by cicatricial contraction, to half its normal calibre. The valvulæ conniventes were obliterated, and the surface of the thickened membrane suggested distinctly a healed ulcer.

It is a well known fact that to excite reflex vomiting it is not necessary that the whole calibre of an intestine be cut off—a partial constriction is sufficient. We were compelled to accept this as the solution of this sad and perplexing case.

SUB-BENZOATE OF BISMUTH, AN ESCHAROTIC.

BY ALLEN J. SMITH, M.D.,

ASSISTANT DEMONSTRATOR OF PATHOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

IN the treatment of a phagedenic tendency in several cases of chancroids in the venereal wards of the Philadelphia Hospital the writer, then on duty as a resident physician, became satisfied of the faulty character of the local measures, in that the escharotics usually employed were too severe for use, except with anæsthetics, and had to be applied too rapidly because of their excessive action. Recalling certain characteristics of several benzoates, a combination of that acid with bismuth suggested itself as of possible service; and acting upon this idea, Mr. Joseph W. England, Chief Druggist of the Hospital, kindly prepared a quantity of the oxy- or sub-benzoate for trial.

Bismuth subnitrate was treated with nitric acid, heated and dissolved. To this, hot water in small quantities at a time was added until a marked opalescence was obtained; and the solution thus prepared added slowly and with constant stirring to a solution of sodium benzoate in water.

The white precipitate was collected, and washed with alcohol to separate any free benzoic acid or sodium benzoate, and then dried. The chemical reactions upon which these steps are based are in Mr. England's opinion probably as follows:

$$BiONO_3 + 2HNO_3 = Bi_3NO_3 + H_2O.$$

$$Bi_3NO_3 + NaC_7H_5O_2.H_2O = BiOC_7H_5O_2 + NaNO_3 + 2HNO_3.$$

In the second equation the bismuth salt is precipitated and the nitrate of sodium and nitric acid separated in the filtrate, in which is present also a quantity of free benzoic acid. After drying, a smooth white powder, of a relatively light specific gravity, was obtained. This was employed in dressing the chancroids, just as iodoform or other antiseptic powders are used; the sore being carefully cleansed, a little of the powder was dusted over the surface and the dressing completed with some simple bland ointment. For a short time no sensation whatever was experienced, then a warmth of the part, and in about ten minutes a burning and tingling sensation manifested itself and continued for several hours—not severe enough in character to render the patient positively uncomfortable, except from excitations of the part, which were afterward controlled by camphor or bromide of potash administered internally, or by adding a little morphia to the bismuth salt in dressing the sore.

The dressing was renewed once or twice daily, and the bismuth powder employed until the type of the sore had changed—within seventy-two hours in the three cases under the writer's care, the unhealthy purulent surface becoming clean and red with active granulation. After this point had been reached iodoform was substituted for the sub-benzoate and the sores allowed to heal, which they did thoroughly and quickly.

This material is undoubtedly a mild escharotic when thus applied, with a slow and continued action; and erodes the unhealthy tissues gradually and comparatively painlessly, thus avoiding the inconveniences of such powerful caustics as nitric acid and bromine.

It was used as an occasional dressing for indolent leg ulcers with marked benefit, stimulating the sores into granulating surfaces, and cleaning them of the peculiar glazed coating such ulcers often present, just as an occasional application of nitrate of silver would do.

223 SOUTH SEVENTEENTH STREET, PHILADELPHIA.

HOSPITAL NOTES.

THE TREATMENT OF TYPHOID FEVER.

GOOD SAMARITAN HOSPITAL, CINCINNATI.

DR. WHITTAKER'S treatment for the mild cases is purely expectant. Most of them require nothing more than rest in bed and milk diet. In all cases, when the

temperature reaches 103°, antifebrin, three to five grains, is administered. Few cases have required more than three grains to effect a reduction of two degrees within an hour. Five grains produce, for the most part, excessive diaphoresis and chills. When this accident has occurred after three grains, antipyrin is substituted, in doses of ten grains. In one protracted (six weeks) case under the writer's observation antifebrin, in three to five grain doses, was given every two to four hours, for three weeks, with invariably good effects upon the temperature and general condition. In protracted cases expressed beef-juice with calves'-foot jelly, is added to or substituted for milk. In all cases whiskey is administered as soon as the pulse flags, and in cases of distinct enfeeblement of the heart the sulphate of spartein is given in one-sixteenth of a grain doses, every four hours, in lieu of digitalis, whereby the stomach is not disturbed.

Of fifteen cases under observation at one time, two showed sharp complications on the part of the lungs. Slight bronchial catarrh was present in nearly all the cases. Rusty and bloody sputum, with crepitus and dulness, occurred in two cases, one of which, the case of a victim of chronic alcoholism, was additionally complicated with profuse hemorrhage from the bowels. Two of the fifteen cases were affected with profuse hemorrhage. One died—the only fatal case thus far; the other, the case referred to, probably will die.

Upon the supervention of hemorrhage all food is interdicted; thirst is allayed with ice. Ice-bladders are placed on the abdomen, small quantities of opium are administered, and subcutaneous injections are made of sclerotinic acid, which keeps better and irritates less than ergotin. In desperate cases salt water is transfused subcutaneously, as recommended by Ziemssen. This treatment proved entirely futile in one case, as stated. The autopsy revealed extensive ecchymotic patches, stretching over a distance of nearly two feet of the ileum. This entire section of the ileum showed intense hyperæmia throughout. The ulcers were clean, with distinct, sharp edges, and were apparently not the sources of the hemorrhage, which issued per diapedesin. In this case each occurrence of hemorrhage was attended with a reduction of temperature to a subnormal degree, and a complete relief of all nervous symptoms. In the case still living the loss of a large amount of blood, while reducing the temperature in the same way, does not, in the least, clear the intellect. In all severe cases the temperature is taken in the rectum, a difference of two degrees having been frequently observed between the temperature of the rectum and mouth. In no case is any reliance placed upon observations made in the axilla.

PRESBYTERIAN HOSPITAL, CHICAGO.

The usual course pursued in DR. HENRY M. LYMAN'S Ward, at the outset of the disease, is to secure a thorough cleansing of the patient. For this purpose he is treated with a full bath externally, and with two or three cathartic, doses of calomel internally. If there is much diarrhœa, mercury and chalk are substituted for calomel. When the stools indicate the action of the cathartic, mercurials are suspended, and medication is directed chiefly toward the skin and the kidneys. In cases of doubtful character, where the possibility of malarial fever is admitted, full doses of quinine are prescribed for a few days; but they are omitted as soon as the uncomplicated typhoid character of the fever is apparent.

During the course of the fever, when no complications arise to require special attention, the patient is frequently sponged with tepid water. The kidneys are stimulated with a solution of potassium chlorate—one drachm to the pint of water, the whole to be drank during twenty-four hours. If patients prefer an acid draught, they are allowed lemonade, tamarind water, or dilute phosphoric acid and water, so long as diarrhœa does not forbid. Sleep at night is procured for restless patients by the administration of whiskey and milk, or urethan in half-drachm doses, or chloral hydrate with potassium bromide. Opiates are rarely found necessary in uncomplicated cases. Alcoholic stimulants are not used unless the heart shows signs of weakness. A diet of milk and animal broths is carefully administered. Gruel *ad libitum* is given, unless flatulence indicates indigestion of starchy substances.

Diarrhœa is not specially treated, unless it threatens to become excessive. Ordinary cases get nitrate of silver and opium every six or eight hours. If the tongue becomes red and glazed, especially if the heart is at the same time enfeebled, turpentine emulsion gives good results. Unusual flatulence is greatly relieved by disinfection of the bowels with naphthaline, in five grain doses every three or four hours. Antipyrin is reserved for cases with high temperature, restlessness, and insomnia. It is not used continuously.

During convalescence, the principal reliance is placed upon a careful dietary and general hygiene, with such medicines as assist digestion and nutrition. Abundant nursing and the least possible medicine are the objects at which we aim in the treatment of uncomplicated typhoid fever.

COOK COUNTY HOSPITAL, CHICAGO.

DR. NORMAN BRIDGE, in cases seen early and when there is any doubt of the diagnosis, gives quinine in a few large doses, to the extent of producing positive cinchonism. He frequently afterward gives it in small or tonic doses, for many days continuously. If there is not positive proof that the bowels have been thoroughly evacuated already, this end is accomplished by a laxative of calomel. Calomel is given occasionally in the course of the sickness in some cases when a laxative is required, this drug having been found more mild and harmless than any other. The most common method of evacuating the bowels, however, when any assistance is required, is by an enema of warm water. No patient is allowed to pass more than forty-eight hours without evacuation of the colon, and in constipated patients an enema is often given each day.

Patients with diarrhœa receive rather full doses of salicylate or subnitrate of bismuth, the former by preference, and small doses of deodorized tincture of opium, but rarely any preparation of turpentine. For severe headache or backache early in the sickness, small doses of opiates are often given, but when headache alone is complained of, and there is much fever, moderate doses of antipyrin are found most useful, since they relieve more or less both conditions.

Alcohol is used only in conditions of serious prostra-

tion with weak heart and rapid pulse, when it is given freely, and with as much regularity as to times and doses as any other remedy. It is unusual for a patient to receive more than eight ounces of whiskey in twenty-four hours, the more common quantity being two to four ounces. Nux vomica and strychnia are given often in the same conditions.

High temperatures are combated with sponge baths and partial or complete packs with tepid water, and with antipyrin or antifebrin. Quinine is not used as an antipyretic. A pack is often continued for several hours, the patient having little or no clothing but the wet sheet. It is not regarded as necessary to resort to any of the water measures till the temperature has reached 103° F., and rarely then unless they are grateful to the patient; and they are discontinued as soon as the temperature falls to 101° F. During the bathing and packing, as well as at all other times, the extremities of the patient are kept warm by clothing and hot applications, regardless of the temperature of the trunk of the body. A bath in a tub has not been used.

Antipyrin is given in ten to twenty grain doses at intervals of one to two hours when the temperature is high, and the pulse not specially weak. More than three such doses are rarely received by a patient in a day, or a night. Patients who have, with their high temperatures, fulness and pain in the head, experience most relief from this remedy and to such it is given by preference.

Antifebrin has been used comparatively little, but in a few cases it has been employed in the same conditions and in the same cases as antipyrin, and with effects nearly identical. Thallin has been used a little, but was discarded on account of its suspected tendency to depress the heart.

A high temperature for a few hours each day is not regarded as, *per se*, a very grave condition; and the disposition on the part of *internes* to use antipyretics of all sorts, is repressed rather than encouraged.

The stools are directed to be received into utensils containing some sufficiently powerful disinfectant.

The diet is in the main fluid, milk being the staple. One or two quarts of milk daily are taken by each patient, who takes nothing else. Egg-nog, beef tea, and other fluid meat preparations are allowed. A little stale bread, or cracker, is often allowed to mild cases throughout, and always forms a part of the diet early in convalescence. In bad cases of diarrhœa milkman's cream is sometimes added to the milk, a smaller quantity being taken, and a corresponding reduction in the amount of the casein being secured.

The presence of tympanites does not lead to any change in the treatment, beyond the application of turpentine stupes to the abdomen.

Hemorrhage from the bowels is regarded as an indication for the use of opiates, warmth to the extremities, for a reduction in the foods that can produce fecal matter, and for stimulants to a moderate degree.

Care is exercised during convalescence to prevent patients from eating improper articles, or too much, and from taking too much exercise; from being chilled generally, and from having cold extremities in particular. It has been found, it is believed, that neglect of these points has led to many true relapses of typhoid fever.

MEDICAL PROGRESS.

ANTISEPTIC RULES FOR MONTHLY NURSES AND PHYSICIANS.—DR. PLAYFAIR, in a paper read at the late meeting of the British Medical Association, gave the following rules for antisepticism in the lying-in chamber:

1. Two bottles are supplied to each patient; one contains a solution of perchloride of mercury, of the strength of one part to one thousand of water, tinted with litmus (called the 1 in 1000 solution), the other carbolized oil (1 in 8).

2. A small basin containing the 1 in 1000 solution must always stand by the bedside of the patient, and the nurse must thoroughly rinse her hands in it every time she touches the patient in the neighborhood of the genital organs, for washing or any other purpose whatsoever, before or during labor, or for a week after delivery.

3. All sponges, vaginal and rectal pipes, catheters, etc., must be dipped in the 1 in 1000 solution before being used. The surfaces of slippers, bed-pans, etc., should also be sponged with it.

4. Vaginal pipes, enema tubes, catheters, etc., should be smeared with the carbolized oil before use.

5. Unless express directions are given to the contrary, the vagina should be syringed twice daily after delivery with warm water, with a sufficient quantity of Condy's fluid dropped into it to give it a pale pink color.

6. All soiled linen, diapers, etc., should be immediately removed from the bedroom.

N.B.—These rules are for the purpose of protecting the patient from the risk arising from accidental contamination of the hands, sponges, etc. It is, therefore, hoped that they will be faithfully and minutely adhered to.

There are, in addition, a few precautions to be used during the labor to which the practitioner should himself see.

1. Before making any examination, or using the antiseptic lotion, he should thoroughly cleanse his hands with soap and water, being specially careful as to his nails, about and under which septic matter may easily lurk.

2. At an early stage of the labor the vagina should once be thoroughly syringed with the antiseptic lotion, and vulva sponged with it.

3. When the head is distending the perineum the external genitals should again be sponged with the lotion.

4. Cold cream, lard, etc., should not be used for lubricating the fingers, and carbolized oil or vaseline should be employed.

5. When possible, sanitary towels should be used to receive the lochial discharges in preference to diapers, as they may be burned when soiled. All risk from imperfectly cleansed diapers is thus avoided.

I do not think that these suggestions impose on the practitioner a burden grievous to be borne, or call upon him to do anything which, having the interest of the patient at heart, he should for a moment hesitate about. —*British Medical Journal*, November 12, 1887.

HYDRATE OF CHLORAL A PREVENTIVE OF RABIES.—At a recent meeting of the French Academy of Sciences,

Brown-Séquard reported a series of experiments upon rabbits and birds, in which by injecting oil of tansy he had produced a species of rabies, which was controlled by the vapor and subcutaneous injections of hydrate of chloral. Arguing by analogy, Brown-Séquard considers chloral a preventive of true rabies, and refers to his previous writings on the subject, and to cases in the human subject, in which he had been able to exemplify his theory.—*L'Union Médicale*, November 5, 1887.

FOR CHRONIC GOUT.—VIGIER has used to advantage

℞.—Lithii carbonat. . . . ʒ 2½.
Sodii iodid. . . . . ʒ 2½.
Ext. gentian. . . . . gr. ɛ3.
Pulv. gummi arab. . . . . gr. 23.
Pulv. glycyrrhizæ . . . gr. 100.—M.

Ft. pil. 100 in num.
To be kept tightly corked.
Sig.—One pill with each meal.

Also,

℞.—Lithii carbon. . . . . ʒ 2½.
Potass. iodid. . . . . ʒ 2½.
Pulv. gummi arab. . . . . gr. 23.
Ext. gentian. . . . . gr. 70.—M.

Ft. pil. 100 in num.
Sig.—One with each meal.—*Revue de Thérapeutique* November 1, 1887.

POISONING BY ANTISEPTIC SOLUTIONS OF BICHLORIDE OF MERCURY.—MR. A. J. PEPPER calls attention (*Lancet*, November 5, 1887) to the source of danger to life from the use of bichloride of mercury in the form of very weak solutions—*e. g.*, 1 in 1500 or 2000. I understand, he says, that in midwifery practice it is not at all uncommon to employ injections of the strength just mentioned for cleansing purposes, not only as a corrective against septic discharges, but also as a prophylactic. Where the patient is free from organic disease of the kidneys one has little need to fear untoward consequences from the treatment under consideration. I am aware of two cases of death from acute inflammation of the bowels following closely on the injection of very weak mercurial solutions into the vagina shortly after parturition. As in each instance no other cause of the fatal complication could be discovered, there is little doubt that the acute irritative lesions in the intestines were due to the bichloride in the course of its elimination. The action of the salt was concentrated, so to speak, in this particular region by reason of grave renal affection. In one of the two cases I made a very exhaustive post-mortem examination. The whole of the small and large intestine was acutely inflamed. There were thousands of hemorrhagic patches, punctate and irregular in shape. There were a few minute recent ulcers. The catarrhal congestion was extreme. Lymph was effused into the substance and upon the surface of the mucous membrane. Slight general peritonitis seemed to have started at the middle of the colon, where the intestinal lesion was more marked than elsewhere. The stomach was not affected. The kidneys were in an advanced state of fatty degeneration. No aperients had been administered to the patient, but a solution of bichloride of mercury (1 in 2000) had been injected into the vagina to prevent decomposition of the lochia. Profuse diarrhœa ensued, and continued until death. The body temperature was never raised, and latterly it was subnormal. I was at a loss to account for the ultimate cause of the diarrhœa and its fatal consequences until the circumstances were explained to me by an obstetric physician who was present at the necropsy, and who had witnessed a precisely similar case in his own practice. The lesson to be learnt from the foregoing narrative is—that even a very attenuated solution of a mercurial salt should not be employed as a vaginal injection without first ascertaining the state of the kidneys by an examination of the urine.

PYLORECTOMY FOR CANCER.—DR. BERNAYS reports, in the *Medical Brief*, No. 8, 1887, a case of cancer of the pylorus, which he found extended into the duodenum, and was adherent to the head of the pancreas. He removed the tumor, and sutured the resected gut, carefully isolating the orifices of the bile-ducts. A drainage tube was left in the abdomen, and antiseptic dressings applied. Bichloride of mercury, 1 to 4000, was the antiseptic employed. The patient died of shock, nineteen hours after operation.

Dr. Bernays' conclusions, from his study of the subject, are as follows:

1. The operation of pylorectomy, for the cure of a cancerous stricture can be successfully performed in only a limited number of cases. It will always be impossible to determine the feasibility of the operation before making an explorative laparotomy.

2. The operation of pylorectomy, in cicatricial stricture following round ulcer, is clearly indicated, and will be feasible in the majority of all the cases.

3. Uncontrollable hemorrhage from a round ulcer of the stomach, which threatens the life of a patient is a clear indication for gastrotomy—not necessarily for pylorectomy. The operation necessary to check the hemorrhage will become apparent after inspection of the location and source of the hemorrhage.

4. Perforation of an ulcer of the stomach into the abdominal cavity is an imperative and vital indication for laparotomy and consequent gastrotomy and gastrorrhaphy.

5. In cases of inoperable carcinoma of the stomach the operation of gastrostomy is indicated with a view to local treatment of the tumor by means of chemicals or the curette from within this organ.

A valuable bibliography is appended to the paper.

THE ALKALINITY OF THE BLOOD IN CERTAIN DISEASES.—VON JAKSCH, of Graz, in an extended article in the *Zeitschrift für klinische Medicin*, Band 13, Heft 3 and 4, concludes that

1. Fever lessens, in greater or less degree, the alkalinity of the blood.

2. This lessened alkalinity is a constant symptom in uræmia.

3. Diseases of the liver, in which destruction of the parenchyma occurs, produce this condition.

4. Leukæmia, pernicious anæmia, and chlorosis lessen the alkalinity of the blood.

5. Poisoning with carbon dioxide produces this result also.

EXCISION OF THE LARYNX FOR MALIGNANT DISEASE.—The operative treatment of malignant disease of the larynx is an essentially modern development of surgical art, and in spite of one or two brilliant but exceptional triumphs, it has till quite recently been marked more by boldness of conception and execution than by solid success. That, however, is no more than could at some time have been truly said of many other provinces of surgery in which the knife, which at first was little better than a lethal weapon, is now an instrument of real and lasting good. The larynx was first completely excised little more than twenty years ago by Dr. Patrick Heron Watson, of Edinburgh, in a case of syphilitic stenosis which directly threatened the patient's life; and in 1873 total extirpation was successfully performed by Billroth for cancer. Since then the operation has been done by many surgeons, but the results have, on the whole, been extremely discouraging.

From Mr. Butlin's recent analysis in his *Operative Surgery of Malignant Diseases*, of Hahn's valuable statistics (Volkmann's *Vorträge*, No. 260, 1885), we learn that 74 cases of excision of the entire larynx for new growths have been recorded: in 3 the disease was respectively tuberculosis, papilloma, and polypi. Of the 71 malignant cases, 25 died within the first fortnight, and 5 within six or seven weeks after the operation; death was due, in a large majority of instances to pneumonia, or purulent bronchitis, and could in no case be attributed to recurrence of the disease. Thus, there appears to be a mortality of about 40 per cent. directly due to the operation itself. Not one of the cases in which the disease was sarcoma and not carcinoma died. Of the 65 cases in which the larynx was completely excised for carcinoma, 30 died from the immediate, or almost immediate, results of the operation; as in the case of abdominal sections, the death-rate has slightly diminished recently, through improvements in operating and after-treatment. A few of the cancer cases died of collapse or hemorrhage; the remainder succumbed to the pulmonary complications above mentioned. The direct entrance of air into the trachea endangers the lungs, as after tracheotomy; but the severe type of inflammation generally observed after excision of the larynx is distinctly septic, and is due to the escape of discharges from the wound into the trachea; the patient, moreover, is always in a more or less enfeebled state of health.

Resection of the larynx or removal of a portion of the organ was first performed for epithelioma by Billroth in 1878; the patient survived the operation six months, when he died of recurrence of the disease. In another case, in which the left half of the organ was excised by Reyher, of St. Petersburg, in 1880, the patient was alive and free from recurrence fourteen months after the operation. At the International Medical Congress of London in 1881, however, the late Dr. Foulis, of Glasgow, who read a paper embodying the whole experience of the profession on [the subject up to that date, argued strongly in favor of complete, as against partial, excision, on the ground that whilst little, if at all, more dangerous in itself, the risk of perichondritis is avoided, and the disease is more thoroughly eradicated. Subsequent experience has not borne out this view. Owing to the great and apparently irreducible fatality attending it, complete excision of the larynx has been looked upon with growing disfavor by surgeons, whilst the removal of a portion of the organ in suitable cases has, during the last few years, been shown to be not only much less dangerous in its immediate consequences, but also more effectual in restoring the patient to comparative health and comfort. The progress that has been made in this direction is largely due to Dr. Eugene Hahn, of Berlin; and one or two of our own countrymen have also operated with success so far as can be judged in the meantime.

The following are the results of partial excision up to the present time: In 12 cases, where half the larynx was removed—in 10 cases for carcinoma, in 2 for sarcoma—only 1 patient died from the direct effects of the operation. The wound is far easier to dress and the patient's condition less desperate than when the entire larynx is excised. In 6 cases the larynx has been completely, and in 2 partially, removed for sarcoma. The after-history of 1 of the complete operations is lost; of the remaining 6, it appears that 1 was quite well and free from recurrence six years after operation; 1 was well two years after; 1 died of phthisis a year and a half after excision of the larynx, without a sign of recurrence of the local disease; 1 died of recurrence of the sarcoma seven months after operation; and 1 fifteen months after. In the 2 recorded cases of partial excision for sarcoma, 1 was free from recurrence "some time after the operation;" 1 died ten months after from pulmonary complication, without recurrence of the new growth. Of the 35 cases of excision for carcinoma which recovered from the operation (excision, as above noted, proved directly fatal to 30 patients), 20 died within a few months from recurrence. Of the remaining 15, the history of 1 case is lost; 2 died of pneumonia at the end of three and four months respectively; 7 cases were yet alive when these statistics were prepared, and free from recurrence at periods ranging from fourteen months to four years. Thus only 1 patient could be considered cured. Out of 7 partial excisions of the larynx for cancer, 1 died of the operation; 3 died of recurrence within seventeen months, and in the 3 which remain there was no recurrence, but only fourteen months had elapsed in one of these, eleven in another, and an unrecorded space of time in the third. It must be observed that many of the above cases appear to have been badly selected, the patient being in an unsatisfactory state of health, or the disease much advanced. Unfortunately, the survivors, not very numerous at the best, too often find but little comfort in life after the operation. Solis-Cohen remarked at the International Medical Congress in London, in 1881, that recovery and mere survival after the operation are two different things; and Sir Morell Mackenzie observed that a patient after extirpation of the larynx was usually in a condition "of great misery." Professor Lefferts, of New York, stated that the "main reason for the patient's subsequent discomfort, not unusual, however, in like cases, was the impossibility of closing the large defect in the neck, by any form of artificial apparatus, so as to permit of perfect deglutition." Since 1881, cases have been noted where the patient's condition was not in any instance altogether unsatisfactory. Still the frequency of fatal lung complications above recorded is suspicious. The loss of voice can be remedied, more or less, by the use of an artificial larynx. After partial

operations the patient can often swallow easily within a few days; but after complete excision, with extensive removal of the surrounding parts, deglutition may be impossible without assistance, and the patient may need to be fed by means of a funnel and tube. Altogether, excision of the larynx is a gloomy subject to contemplate. For sarcoma, partial or even complete removal is not very unsatisfactory, provided that the disease has not advanced too far. Partial excision for carcinoma is also no desperate operation, but it has not been performed with sufficient frequency to allow of a very decided verdict. As to complete excision for carcinoma, it is highly unsatisfactory. As a rule, it appears to mean death; as an exception, it signifies a short but harassed lease of life, with constant fear of recurrence and of lung complications. Truly a patient under such conditions may say of his life, like the Duke in *Measure for Measure*, "If I do lose thee, I do lose a thing that none but fools would keep."—*British Medical Journal*, Nov. 19, 1887.

THE ANTISEPTIC TREATMENT OF DIPHTHERIA.—LE GENDRE, of Paris, in the *Archives de Laryngologie*, No. 1, 1887, gives the following formulæ for antiseptic mixtures to be used in diphtheria:

Bichloride of mercury may be given in

Aquæ destillat. . . .	℥ 3¼
Tinct. aconit. . . .	♏ 15 to 30.
Sodii chlorid.	
Pepsinæ	āā gr. ¾.
Hydrarg. bichlorid. . .	gr. ⅙ to 2¼.—M.

Sig.—A teaspoonful every hour.

Cyanide of mercury has been employed in the following solution:

Aquæ destillat. . . .	℥ 15.
Tinct. aconit. . . .	♏ 15.
Hydrarg. cyanid. . .	gr. $\frac{3}{10}$.—M.

of which a teaspoonful may be given hourly.

Iodoform may be locally applied in the following:

Ether	℥ 6¼.
Balsam tolu. . . .	♏ 75.
Iodoform	gr. 38.

In powder it may be mixed with sugar, 1 to 3.

Bromine and the bromides may be given in

Bromin. (pur.)	
Potass. bromid. . . .	āā gr. 8 to gr. 15.
Aquæ destillat. . . .	℥ 50.

with which the pharynx may be pencilled every two or three hours; it may also be used by inhalation.

Sulphur and sulphides may be prepared for use as follows:

Ol. amygdal. dulc. . .	℥ 5⅝.
Sulphur. sublimat. . .	gr. 38.

This may be used as a gargle.

The following, in pill form, has given good results:

Calcii sulphid. . . .	gr. ¾.
Digitalin.	
Quiniæ arsen. . . .	āā gr. $\frac{1}{60}$.

For infants the dose should be but one-half.

Salicylic acid may be used in

Aquæ destillat. . . .	℥ 25.
Glycerin.	℥ 2½.
Aquæ lauro-cerasi . .	♏ 15.
Acid. salicylic. . . .	gr. 4½.

which may be applied upon cotton to the fauces.

Benzoate of sodium has been frequently tested, and is used by Litzerich in the following:

Aquæ destillat.	
Aquæ menth. piper. . .	āā ℥ 10.
Syrup aurant. cortic. . .	℥ 2½.
Sodii benzoat. . . .	gr. 75.

From half a teaspoonful to a dessertspoonful hourly.

Lactic acid is given by Bricheteau and d'Adrian, by inhalations of spray, in solution 1 to 100, as a gargle:

Aquæ	℥ 25.
Syrup aurant. . . .	℥ 7½.
Acid. lactic. . . .	gr. 75.

may be employed.

Diphtheritic ulcers may be touched with

Glycerin	℥ 15.
Acid. lactic. . . .	gr. 45.

Oxalic acid, given internally, may be used after the prescription of Cornillon:

Infusion of green tea . .	℥ 32½.
Syrup aurant. cortic. . .	℥ 7½.
Acid. oxalic. . . .	gr. 23.

Dose, a teaspoonful to a dessertspoonful every three hours. With this treatment is generally combined the use of a tea made by infusing laurel leaves. The local use of oxalic acid is best in solution, 1 to 20, or in glycerine, 1 to 100.

The writer personally prefers the following treatment: Three or four times daily touching the diseased surfaces with corrosive sublimate, 1 to 100 in alcohol; he dips a small sponge or pledget of cotton in this, carefully presses out superabundant fluid, and touches the false membrane. Every four hours he orders thorough spraying or douching of the nares and fauces with *warm* boric acid solution, 4 to 100. Internally, benzoate of sodium, gr. 45 to ℥ 3 per diem, in a mixture given in teaspoonful doses hourly. Bordeaux, Spanish, and Champagne wines and coffee are to be freely used. In a succeeding number of THE MEDICAL NEWS will be given additional formulæ for the treatment of diphtheria, as collected by LE GENDRE.

THE CARE OF SCHOOL CHILDREN'S EYES.—At the Vienna Congress of Hygiene COHN, of Breslau, in an extended study of the eyes of school children concluded that of all lights the electric is the best. Definite provisions regarding desks, books, paper, types used, and the arrangements of curtains and blinds are advised, and especial caution in avoiding overwork is enjoined. Regarding glasses, no child is allowed to wear glasses whose myopia is less than two dioptres. If the myopia ranges between two and six dioptres, a concave glass, whose distal focus is about twenty inches, is given, and precautions are taken to prevent the child from injuring the chest by constant stooping. If the myopia is more than six dioptres, it is generally found that a complica-

tion of eye disorders is present, and glasses are often harmful. The attention of the profession, and of the State is urged for the careful supervision of schools and scholars.—*Deutsche medicinische Wochenschrift*, November 3, 1887.

PREGNANCY (RACHITIC PELVIS); INDUCTION OF LABOR; CÆSAREAN SECTION; RECOVERY.—BREISKY, of Vienna, reported at a meeting of the College of Physicians of Vienna, October 28, 1887, the case of a rachitic woman, who in addition to the usual effects of rachitis suffered from atrophic coxitis. As no absolute hindrance to delivery existed premature labor, at the beginning of the ninth month, was induced. The head, however, failed to descend into the pelvis; the temperature rose, and labor made no progress. Sänger-Cæsarean section was performed. A five per cent. carbolic acid solution was used to disinfect the decidua, and iodoform was freely used. The stitches were removed on the tenth day; perfect recovery followed. Breisky warns against undertaking Cæsarean section for insufficient reasons, because (1) We cannot measure the conjugata vera with exactness; (2) we cannot determine the size of the head exactly before birth; (3) we cannot estimate the power which the uterus will exert, nor the success of the uterine contractions. In view of these facts, no merely theoretical grounds should lead to the performance of Cæsarean section.—*Wiener medizinische Presse*, October 30, 1887.

AN EFFICIENT VESICANT.—SOULES has obtained excellent results from

Acid. carbolic.	gr. 30.
Alcohol	gtt. 5.
Camphor. pulver.	gr. 75.

To be pulverized together; and

Ol. olivæ.	ʒ 4½.

to be added.

This may be used as a vesicant, as the conditions indicate, with proper caution. Dressings should be renewed at least daily.—*Revue de Thérapeutique*, Nov. 1, 1887.

CARCINOMA OF THE DESCENDING COLON; THREE OPERATIONS FOR THE RELIEF OF OCCLUSION; RECOVERY.—At a meeting of the Vienna College of Physicians, on November 4, 1887, VON HACKER exhibited a patient on whom an operation for artificial anus was performed in January, 1887, for carcinoma of the colon, with occlusion of the bowel. In May, the patient returned, asking that the fistula be closed, as feces were passing naturally. This was done, but at the end of June last it was necessary to remove the tumor, to relieve the original symptoms which had returned. The patient recovered from the intestinal resection in four weeks, and was entirely relieved. The constricted bowel was so nearly occluded that a match could be inserted into the stricture with the greatest difficulty. The tumor was a carcinoma, of the cylindrical epithelial type. BILLROTH remarked that in these cases when left to nature, the necrosis of the exuberant elements of the cancer resulted in their discharge and in the temporary relief of the stricture; the cicatrization which followed, however, made the occlusion still more pronounced.—*Wiener medizinische Presse*, Nov. 6, 1887.

IODOPHENOL IN PERTUSSIS.—ROTHE prescribes

℞.—Acid. carbolic.	gr. ¾.
Alcohol	♏ 1.
Tinct. iodin.	gtt. 5.
Aquæ menth. piper. . . .	ʒ12½.
Tinct. belladonn. . . .	♏ 15.
Syrup. papaveris . . .	ʒ2½.

(*Syrup papaveris* is but little used in America; its opium strength is half a grain of opium to one thousand grains of syrup, and more definite preparations of opium may be better employed.) Of this a small teaspoonful to a dessertspoonful may be given every two hours.

Rothe found that this combination of remedies reduced very distinctly the number and frequency of the paroxysms.—*Journal de Médecine de Paris*, October 30, 1887.

PSEUDO-ASTHMATIC DYSPNŒA IN CANCER OF THE PHARYNX.—LEGUEU reports, in the *Gazette Médicale de Paris* of November 5, 1887, the case of a woman, aged fifty-two, admitted to the Hospital Cochin, complaining of pharyngeal pain and paroxysmal dyspnœa. Examination could find nothing to account for the dyspnœa, except mechanical obstruction to breathing, and in a paroxysm, threatening life, tracheotomy was performed. Temporary relief followed, but paroxysms of dyspnœa recurred, which finally proved fatal. Under the temporary relief afforded by tracheotomy, the respiratory tract was carefully explored. Phonation was unimpaired, the larynx was normal; visual examination of the pharynx revealed no lesion to account for the dyspnœa, but, on introducing the index finger into the pharynx, an induration was found above the lower border of the velum palati and upon the left lateral wall of the pharynx, whose extent it was impossible to determine. The canula remained entirely free, and death evidently resulted from a lesion beyond the larynx. Post-mortem examination revealed cancer of the left lateral wall of the pharynx, a little above the lower border of the velum palati, and extending downward on the posterior pharyngeal wall. At one point the pharyngeal wall had been perforated, and the prevertebral tissue had become involved, and a cavity containing about a drachm of fetid pus was present. So extensive had been the involvement of the pharyngeal wall that both the pneumogastric and superior laryngeal nerves of the left side had been implicated; they were adherent to the tumor by indurated cellular tissue. The trachea and larynx were absolutely free. There was no involvement of the tracheal and bronchial glands. Death was caused by the implication of the nervous supply of respiration.

PRIMARY ACTINOMYCOSIS OF THE BRAIN.—BOLLINGER, of Munich, reports the case of a woman, aged twenty-six, who suffered from symptoms of a cerebral tumor, without convulsions. Death resulted, in coma. Post-mortem examination showed cysto-myxoma of the third ventricle, with œdema and cerebral anæmia. The mass of the tumor was composed of actinomycoses. The invasion of the parasite was probably by the blood, and then the formation of cerebral emboli containing actinomycoses.—*Wiener medizinische Presse*, Nov. 6, 1887.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's Address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE, ... $5.00.

SINGLE COPIES, ... 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, DECEMBER 3, 1887.

THYMOL IN DIABETES MELLITUS.

ISOLATED cases of disease are valuable on account of their rarity or because they have been thoroughly studied; doubly so when they unite both of these qualities. Diabetes mellitus can scarcely be called a rare disease. Its diagnosis is readily made and the details of its dietetic management are, with minor exceptions, generally agreed upon. In its medicinal treatment, however, the number of drugs that may be employed is suspiciously large, a fact doubtless owing to inaccurate observations. The proper study of a case of diabetes may be compared to an elaborate physiological experiment. In fact, it is nothing else. Not only does it demand that the quantity of urine and its percentage of sugar be estimated, but also that careful records be kept of the body weight and the amount and quality of the ingesta, and this work is merely preliminary to the study of the effect of any of the so-called remedies for this disease.

To appreciate properly the effect of a drug in this affection, it should be administered, not only while the patient is on an exclusively proteid diet, but also while he is partaking of carbohydrates, for, in the former case, the improvement, or cure, may be ascribed to the drug when it is due, in whole or in part, to the diet.

In the recently established therapeutic clinic of the University of Siena, PROF. BUFALINI has thoroughly studied the action of thymol in two cases of diabetes, the object of his investigation being twofold. He first endeavored to ascertain the effect of thymol upon the excretion of sugar, and, secondly, whether its well-known power as an intestinal disinfectant would exert a favorable influence upon the condition known as acetonæmia.

To determine the former question, the patients were first placed upon a mixed diet of soup, meat, eggs, bread, coffee, milk and wine, the amount of each being given by weight. The quantity of feces and urine, the density of the latter and its percentage of sugar were also ascertained, as well as the bodily weight in one case, the other being too feeble to be moved. After from a week to ten days of such observations, thymol was given in doses of 30 to 45 grains per diem and continued long enough (to the two cases 12¾ drachms were given in eighteen days) to demonstrate that, while the patient is on a mixed diet, this substance exerts no appreciable effect upon the quantity of urine, its specific gravity, or its percentage of sugar.

When the patient is on an exclusively proteid diet, the case is different and requires some explanation. It is a common observation that as soon as a diabetic is placed upon an albuminoid diet, the sugar in his urine will diminish, perhaps entirely disappear. A persistence in this regimen is, however, apt to be followed by digestive disturbances, with abnormal intestinal putrefaction, and a speedy reappearance of the absent, or increase of the diminished sugar. This occurred in one of Bufalini's cases. Under a proteid diet continued for one month, the sugar had entirely disappeared. Continuing the same diet, gastro-intestinal disturbances (anorexia, vomiting, borborygmi, diarrhœa) set in and were soon followed by a reappearance and steady increase of the sugar. At this juncture it occurred to Bufalini to administer thymol, he believing with his colleague, Martini, and with the writer of this article, that it is the best known intestinal antiseptic. The result was immediately favorable and the conclusion with reference to the drug is that it is not only useful but necessary in cases of diabetes placed upon an exclusively proteid diet. No deleterious effects from the use of thymol were observed by Bufalini and none need be apprehended, although, in the writer's experience, smaller doses (from ʒss to ʒj) are quite efficient in abnormal conditions of intestinal putrefaction.

The second object of Bufalini's research was to test the effect of thymol upon the condition known as acetonæmia. Both of these patients presented all the symptoms of this condition. They were somnolent, greatly prostrated, and they exhaled the odor, and their urine gave the reactions of this substance. Under the use of thymol, the characteristic odor of the breath diminished and the reactions of acetone in the urine became faint, while the general condition improved. Bufalini holds that these results of the thymol treatment establish the fact that acetone is formed in the intestine by abnormal fer-

mentation of the sugar excreted by this channel, and that the ferment is an altered gastro-intestinal mucus.

LAPAROTOMY FOR GUNSHOT WOUNDS OF THE ABDOMEN.

ONE of the most remarkable revolutions of modern surgery has been that which has occurred in the treatment of penetrating gunshot wounds of the abdomen. Until very recently, a surgeon would have been considered foolhardy had he opened the abdomen for the purpose of searching for and repairing intestinal lesions. Now one who fails to perform laparotomy when there is a probability that the viscera have been injured or bloodvessels torn, by a shot or other penetrating wound, is considered reprehensible; and, without doubt, in the near future, the surgeon who fails to offer his patient the chances afforded by an operation, will be held criminally responsible in the event of an unfavorable issue of the case. The statistics of the late Civil War, as compiled by Otis, which demonstrated how almost uniformly fatal these injuries were, when treated expectantly; the vigorous writings of Marion Sims, and the experimental work upon animals, performed first by the elder Gross, and more recently by Parkes, of Chicago, have been potent factors in effecting this radical change in the treatment of these injuries. It only required the successful cases of Kocher and Bull, to prove convincingly that what was true as regards animals, also held good in the case of human beings.

At the opening session of the Surgical Section of the Ninth International Medical Congress, DR. CHARLES T. PARKES, of Chicago, introduced this subject in an instructive paper. Up to the present time somewhat more than forty operations for gunshot wounds have been performed, with a success of about thirty per cent., which rate will undoubtedly increase as operators become more skilled, and acquire more confidence in the procedure. In our issue of November 12th, DR. J. M. FOX, of Philadelphia, reports another recovery after abdominal section, and suturing of the intestinal lesions, which is believed to be the first successful operation of this nature which has been performed in this city. At the Congress in Washington, there was a considerable diversity of opinion in regard to certain points, but it was generally conceded that laparotomy was proper when there was a well-founded suspicion that the bullet had penetrated the peritoneal cavity. It can scarcely be doubted, however, that the number of successful cases treated expectantly has been underestimated, but we cannot recommend this method of treatment except under exceptional circumstances.

There are some questions connected with this subject which have not received sufficient elucidation. Is it necessary to perform laparotomy in every case of penetrating abdominal wound? It is our opinion that all wounds of the abdominal parietes should be explored with a disinfected finger or probe, and if penetration has been effected, the wound should be enlarged, in order to determine whether lesions of any kind have been made. In stab-wounds the lesion must be limited to the region of the wound, hence it is not necessary to perform median section, and make an extensive examination of the bowels; but in gunshot wounds, unless the bullet is of very small size, median section had best be performed.

Should laparotomy be performed for posterior and side wounds? The same rule applies as for wounds of the anterior abdominal wall; the wound should be explored with finger, probe, or by incision, and if it leads into the peritoneal cavity, section in the linea alba should be made. Fortunately, wounds in the back and side, even when they do penetrate the solid or hollow viscera, are very much less fatal than those which enter from the front, owing doubtless to the better drainage, and to the fact that the peritoneum is absent from the posterior surfaces of some of the viscera.

We think that whilst there may be some difference of opinion in regard to the propriety of an operation in individual cases, there can be no dispute upon the propriety of operating in general when there is a probability of perforation of the intestines, or any of the other abdominal viscera. The fact appears to be well established that all penetrating wounds of the abdomen are less fatal when treated by operation than when left to the processes of nature.

ALTERNATING PYREXIA IN HODGKIN'S DISEASE.

IN the *Berliner klinische Wochenschrift* of August 1st and November 7th, EBSTEIN describes a remarkable case of lymphadenoma of the internal glands with an alternating pyrexia of most peculiar type. The patient, a man, aged nineteen years, had ten attacks of fever between the 13th of November, 1886, and the 6th of July, 1887. The pyrexial period continued thirteen or fourteen days, and the fever reached as high as 104°–105.8° F. In the intervals, which lasted, on an average, ten or eleven days, the temperature was usually subnormal. There was moderate enlargement of the spleen, no increase in the size of the external lymph glands, and, with the exception of the fever, the patient presented no special symptoms. The blood was examined, with negative result. After the 7th of July the fever became almost continuous, and death occurred with œdema and coma on the 14th of August. The autopsy revealed the lesion of lymphadenoma of the bronchial, mediastinal, and retroperitoneal groups,

with growths in the lungs, pleura, and liver. The case, then, was one of Hodgkin's disease, or pseudo-leukæmia, with an unusual type of pyrexia, which had, however, been previously described by Murchison, Gowers, and Pel, though in none of the instances on record was the alternating pyrexia of so striking a character.

What interests us particularly is the fact that Professor Ebstein regards his case as an illustration of a new disease, and writes under the caption of "Chronic Relapsing Fever, a New Infectious Disease." As the affection has nothing whatever to do with true relapsing fever, the febris recurrens, we must consider the name most inappropriate, in spite of the recurrent type of pyrexia; but we object still more seriously to any such multiplication of diseases by giving undue prominence to some one feature or symptom. The truth is, that in Hodgkin's disease the fever is very variable; some cases are afebrile throughout, more commonly there is for periods a continued fever, or the type is remittent. We have seen one case in which the fever was distinctly intermittent with paroxysms of chill, hot and sweating stages, and then we have the alternating pyrexia noted by the writers referred to above, the most remarkable illustration of which is afforded by the case under discussion. Manifestly, it would be just as reasonable, should we meet in further cases with a well-marked type of pyrexia, to describe them under the title of "chronic malaria, a new infectious disease," as it is for Professor Ebstein to make a chronic relapsing fever out of a case of Hodgkin's disease with alternating pyrexia. Nor do we think that any satisfactory classification of the cases of the disease can be made in a factor so variable and uncertain as the fever. The type of alternating pyrexia appears to be more common in cases in which the deeper glands are involved, and a knowledge of its occurrence may be a help in diagnosis, and in calling attention to this Ebstein's contribution will be of great service. We cannot, however, but regard it as a curious error in judgment that he should have described the case as a new infectious disease, and under such a misleading title as chronic relapsing fever.

TYPHOID FEVER is, at present, epidemic in Cincinnati. The visitation is chiefly attributable to the state of the Ohio River, which has never been so low since 1881, when this disease was unusually prevalent. The death reports for the week average about six per day; the number of cases is variously estimated at 600 to 1000. The various hospitals of the city contain about 150 cases. The disease prevails in all parts of the city, in the most remote suburbs, as well as the city proper. Upon the advice of physicians most families take the precaution of boiling all the drinking water and milk. It is a common sight to see children on their way to school with bottles of boiled water slung across their backs with their satchels. There is general testimony at the medical societies that the disease is mild, though the mortality report is much larger than at any time in the history of the city. One prominent physician informs us that he has seen in private practice more cases of severe hemorrhage than in any previous experience with the disease.

Drs. Rushford and Cameron, of the Bacteriological Laboratory of the Medical College of Ohio, have succeeded, by Brouardel's method, in discovering by culture experiments, and demonstrating before the Cincinnati Academy of Medicine the bacillus of typhoid fever in the waters of the Ohio River.

No more striking illustration could be given of the progress which the Japanese have made in modern medical methods than in the *Journal of the College of Medicine of the Imperial University, Tokio*, No. 1 of which has just reached us. It is in small quarto form, and in typographical detail is not equalled by any of our exchanges. The execution of the colored lithographs, made, we notice, by native artists, is on a par with the choicest German work of the kind. The subject-matter is worthy of the setting. The principal article contains in full the research on the contagion of syphilis, by Disse and Taguchi, the preliminary account of which has already been noticed in THE NEWS. They claim to have isolated, cultivated, and successfully inoculated a microbe in this disease. A second long article is on chyluria, by Murata, assistant at the medical clinic of Prof. Bätz. A third shorter one, on the situation of the inner ear, completes the number. The *Journal* will be warmly welcomed the world over, and will take a prominent position among the scientific publications of the day.

DR. CHARLES B. NANCREDE has been elected Surgeon to the Jefferson College Hospital in the place of Dr. R. J. Levis, resigned.

THE fact that more than 1200 practitioners of medicine have taken courses at the New York Polyclinic since its opening in November, 1882, is proof that in this country, at least, post-graduate schools meet a want.

DR. THEODORE R. VARICK died November 23, 1887, at his home in Jersey City, at the age of sixty-one years. In his death northern New Jersey loses her most eminent surgeon. He was a native of New York, coming from Revolutionary stock—Col. Varick, one of his ancestors, having been on the staff of General Washington. He attended Rutger's College, and, at the age of twenty years, took his medical degree from the New York Uuiversity. He

soon after took up his residence in Jersey City, and there remained during the rest of his life. He was a large man physically and intellectually, and went into the front rank in every medical and sanitary department in which he interested himself. He became remarkably skilful as a surgeon. He was for seventeen years Surgeon-General of the State, and, at the time of his death, President of the Hudson County Health Board, and Surgeon to the St. Francis and Jersey City hospitals. The cause of his death, which was unexpected, was consequent upon an accident, about a week before, whereby he sustained a fracture of both bones of the leg. He was properly treated, and was feeling so well that he undertook to receive the visits of some of his patients in his office. Suddenly he was taken with symptoms of heart-clot, and the tide of life rapidly ebbed. He left a family of six children, the eldest of whom is a physician who had been associated with him for ten years.

WE understand that Professor Da Costa will deliver the next Middleton Goldsmith lecture under the direction of the New York Pathological Society some time in the coming spring.

REVIEWS.

A SYSTEM OF GYNECOLOGY BY AMERICAN AUTHORS. Edited by MATTHEW D. MANN, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, N. Y. Volume I. 8vo. pp. 789. Philadelphia: Lea Brothers & Co., 1887.

IN his preface the editor declares that his purpose has been to secure not only full and complete articles, but also those thoroughly practical; and in this he has been markedly successful. The impression made by the book is that of one written by practitioners of gynecology for the general practitioner who includes diseases of women in his practice. The tone of the book is not didactic, but is rather that of the concise statement of facts, with the coloring which the writer's experience has caused them to assume in his own mind. Abundant illustrations, three of them in colors, and full references to the literature of the subject add to the interest of the reader.

The Historical Sketch, by Dr. Jenks, affords an interesting exposition of the development of gynecology in the United States; among the events justly considered historical are included several of minor importance, hardly worthy of a place in such a retrospect. It is not the discovery of a novelty, but the demonstration of its value which is of sufficient merit to cause it to be remembered. Dr. Garrigues writes upon The Development of the Female Genitals and their Malformations, in a lucid and interesting manner, showing a thorough review of the literature of the subject. Dr. Coe's article on The Anatomy of the Female Pelvic Organs abounds in practical applications, and is highly valuable and interesting. Gynecological Diagnosis, Surgery, and Therapeutics are treated with satisfactory conciseness by Drs. Grandin, Dudley, and Skene; and Electricity as a medical agent is fully discussed by Dr. Rockwell. Dr. Wylie expresses his beliefs regarding Menstruation and its Disorders in terse and forcible language which commands consideration, if not acquiescence. The well worn field of Sterility is traversed by Dr. Jackson, while the editor contributes a well written article on Diseases of the Vulva. Dr. Palmer writes upon the Inflammatory Affections of the Uterus, and Dr. Reamy on Subinvolution of the Vagina and Uterus, both articles being upon subjects of the highest importance, and treated with corresponding ability. Dr. Maury and Dr. Van de Warker, in Peritoneal Inflammation and Pelvic Hæmatocele and Hæmatoma, complete the volume with articles sustaining the excellence of those which preceded.

The editor's arrangement of the present volume is excellent, and Mann's System of Gynecology, as a guide and aid for the practitioner, will prove not only valuable but highly interesting and convenient.

ANATOMY, DESCRIPTIVE AND SURGICAL. By HENRY GRAY, F.R.S. Drawings by H. V. CARTER, M.D. Edited by T. PICKERING PICK. New American from the Eleventh English Edition. Revised and re-edited with additions. By WILLIAM W. KEEN, M.D., Professor of Surgery in the Woman's Medical College of Pennsylvania, etc. Royal 8vo. pp. 1100. Philadelphia: Lea Brothers & Co., 1887.

MUCH as we have abridged the title-page, what we have copied from it indicates the high estimation in which this book is held by students of anatomy, an estimate which has remained for more than twenty years. Always attractive to students from the ease with which its plates can be used as a preparation for the quiz-room, this book is now presented to the profession in America, not only with the additions made to it by the English editor, but with very numerous ones made by Dr. Keen. These last are too varied for mention here. It is enough to say that the American editor has added one hundred and thirteen engravings, many of which are original. Among them we note as particularly valuable those of sections through different parts of the body and the series illustrating cerebral localization and topography. Those giving the points for the application of electricity to the muscles will also be found of much assistance to the general practitioner. Holden's *Landmarks* has also been added to the volume after revision by Dr. Keen.

The coloring of the arteries, veins, and nerves is a new feature in the book, but the American student is able to choose between an edition possessing this novelty and one in simple black and white. Well entitled as the older editions of "Gray" are to praise, it is only right to add that its value has been much enhanced by the labors of its well-known American editor, reaching as they do, not only to the illustrations but to a careful and thorough revision of the text. Indispensable as this Anatomy has been found by the vast army of physicians who have used it, and relied upon it in the past, he lacks a most important help whose shelves do not carry this new and handsome edition.

SOCIETY PROCEEDINGS.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 11, 1887.

THE VICE-PRESIDENT, WILLIAM GARDNER, M.D., IN THE CHAIR.

TREATMENT OF ULCERS BY THIERSCH'S METHOD OF SKIN TRANSPLANTATION.

DR. BELL read a paper on the above subject and exhibited a number of cases which had been treated by Thiersch's method. One case of large ulcer of the leg in an old man was healed completely in three weeks with one dressing. The ulcer had never been healed for thirteen years. Three other large chronic ulcers of many years standing had been completely healed and covered with good sound skin in less than a month. Dr. Bell said that the advantages of this method are, that ulcers which cannot be induced to heal by the usual modes of treatment could be healed in from three to four weeks without preparatory treatment and usually with a simple dressing. The method consists in the removal of the granulations and all unhealthy tissue, and the transplantation of large pieces of epithelial layer of the skin under the strictest antiseptic precautions. The important gain obtained by this method was reproduction or rather perpetuation of good sound healthy skin, which was much less likely to break down than the scar left after the usual mode of healing. The reader claimed that the operation was suitable for all kinds of non-specific ulcers of any magnitude.

DR. F. W. CAMPBELL congratulated Dr. Bell on his successful treatment, but said that while new methods might be of advantage, it was not well to discard the old ones. He himself had had phenomenal success in treating old chronic ulcers of the leg by blistering and Boynton's strapping. He had often healed ulcers in this way in three weeks, the patient going about the whole time.

DR. RODDICK exhibited a number of

CYSTINE CALCULI

passed per urethram. The patient was a delicate man æt. fifty-seven. He had a history of several attacks of renal colic. The first attack was some three years ago, and was followed by the passage of some fifty calculi, varying in size from a pin's head to a large pea. Latterly the attacks had been less severe and had not been followed by the passage of calculi.

Formerly the pain was equally severe over both kidneys, but latterly only the left was painful. There was no hereditary history of stone. Dr. Roddick remarked that the cystine calculus was exceedingly rare, less than one per cent. in European collections; Gross never met with a case. It is common in dogs. Nearly all cases reported show a history of heredity. This variety of calculus always forms in the kidney and is usually multiple. The calculus has the appearance of beeswax and is easily compressed. The specimens exhibited show a faceted appearance due to lying in contact either in the kidney, pelvis, or prostatic urethra. The majority of stones passed in this case were coated with uric acid.

DR. RUTTAN remarked that this was the only calculus that contained sulphur. He described the chemical characters of cystine and showed the tests by which it might be recognized.

DR. RODDICK also exhibited a large

PERIOSTEAL SARCOMA OF THE LOWER END OF THE FEMUR

which he had some days before removed from a man æt. twenty-four. The patient, a civil engineer by profession, was thin and very anæmic. Family history of tubercle, but none of malignant disease or tumor of any kind. No history of syphilis. Was in good health until last July, when he sustained a slight injury of the left knee, this was aggravated later on by kneeling in a canoe for several days paddling. At first the case looked like a simple or rheumatic synovitis and was treated as such by rest and blistering. When he came under Dr. Roddick's observation there was a great deal of distention of the knee-joint with very severe pain. The skin was thickened and slightly œdematous, but had not the characters of strumous synovitis. Aspiration showed thin bloody serum containing blood clots and broken-down tissue. Sarcoma was now suspected, and the patient having been etherized an exploratory incision was made into the joint, when the true state of affairs was revealed (viz., a sarcoma of the lower end of the femur), and the thigh was amputated in its upper third. Dr. Roddick said that had the patient's condition warranted it he should have preferred amputation at the hip-joint. He believed periosteal sarcoma was never liable to recur if the bone was amputated in its continuity. If the case was one of myeloid or central sarcoma he should not hesitate to amputate through a healthy part of the affected bone. The patient was doing remarkably well, and the wound had healed by first intention.

DR. HINGSTON said he, in similar cases, always removed the whole bone, when he amputated in the continuity of a bone he had always regretted it, for recurrence was generally the rule, but when he removed the whole bone recurrence was the exception.

DR. BELL thought that the chances in persistent sarcoma were quite as good if the affected bone was cut through at a sufficient distance from the tumor, as if the whole bone was removed, and in his experience the recurrence usually took place in some internal organ and not in the remaining portion of the amputated limb.

GANGRENE OF THE INTESTINE FROM STRANGULATION; RESECTION OF THE AFFECTED PORTION.

DR. BELL showed ten inches of gangrenous ileum which he had excised from a patient suffering from strangulated hernia. The history of the case is as follows:

B. D., æt. seventeen years, plumber, was admitted into the Montreal General Hospital on the evening of the 8th of November, suffering from a strangulated inguinal hernia on the right side. On Sunday, November 6th, suffered severely from pain in the upper zone of the abdomen and noticed a swelling in the right side of the scrotum. He took a dose of black draught, which caused one small motion. Vomiting set in the following morning and continued until his admission into the hospital. The patient having been placed under ether, moderate taxis was employed, and failing to reduce the

hernia, operation was determined on. On opening the sac about ten inches of small intestine were found in the canal. The constriction was incised and the bowel drawn out and examined. It was dark in color but glistening, and was distended with gas. Thinking the bowel to be in fair condition it was returned within the abdomen. The obstructive symptoms, however, remained unrelieved, and tympanitic distention of the abdomen gradually developed. The pulse and temperature as well as the general symptoms indicated peritonitis. Thirty-six hours after the herniotomy he decided to open the abdomen and endeavor to relieve the obstruction.

An incision was made in the middle line and the cavity opened. General peritonitis was present and all the small intestine enormously distended. The obstruction was found to be due to the collapsed condition of the portion of gut which had been found in the hernial sac; this was seen to be the lower part of the ileum and it was quite gangrenous, the lines of demarcation being at the points where it had been strangulated at the internal ring. The gangrenous portion was excised as well as a triangular portion of the mesentery, the operator cutting through the healthy bowel half an inch beyond the line of demarcation at either end, the lower section being about three inches from the ileo-cœcal valve. The cut ends of the intestine held in a towel by an assistant, were carefully united with sutures, the first six or eight being carried through the whole thickness of the wall of the bowel at opposite points to secure accurate coaptation, and then a continuous Lembert suture was employed. The intestines, which, on account of their distended condition, had been allowed to escape from the abdomen, could not be returned, so they were punctured with the needle of an aspirator which allowed the escape of gas and so enabled the bowels to be replaced. The abdomen was washed out with warm water, a drainage tube introduced, and the abdominal wound closed. The operation occupied one and a half hours. The patient, who was much collapsed, died two hours after the completion of the operation.

DR. ARMSTRONG said that he had twice returned gut in strangulated hernia, which had afterward became gangrenous. In both cases the gut had the glistening appearance of health. He, himself, was inclined to doubt the value of this sign, and in future, would not rely on it.

TUBERCULOUS DISEASE OF THE BLADDER.

DR. JOHNSTON exhibited the kidneys and bladder taken from a patient who had died of general tuberculosis.

The man, whose age was about thirty-five, entered the Montreal General Hospital November, 1886, suffering from symptoms of stone in the bladder, viz., frequent and painful micturition, and pain increased on movement, occasional hemorrhage at the end of micturition, etc. On examination, no stone was found. The urine was examined for bacilli of tubercle, but none found, After remaining in hospital some time, Dr. Bell performed a median cystotomy, and explored the bladder but found nothing; patient went out with the perineal wound unhealed, and with no improvement in his symptoms. He returned about a month ago with the wound still unhealed, and in an emaciated condition. The granulations of the wound and urine were again examined, without result, for bacilli. Soon after he developed symptoms of meningitis, and died. At the autopsy, there was found a condition of general tuberculosis, tubercular peritonitis, meningitis, and pleuritis; also, tubercular cystitis. There was tuberculosis of the prostate, trigone, and wound. In the right ureter there were tubercular deposits, and in the pelvis of the right kidney. There was amyloid disease of the kidneys and liver. Dr. Johnston stated that he had no doubt at all that the first deposit of tubercle occurred in the prostate.

DR. SHEPHERD said that it was a curious fact that in these cases tubercle did not appear in the lung till a late stage, if at all. In the first stages, the diagnosis of tuberculous disease of the bladder is obscure, the onset being often insidious. The three prominent symptoms were frequent and painful micturition and bloody urine. The treatment is not satisfactory. Guyon, of Paris advises cystotomy and the avoidance of catheterization. This authority regards the bleeding in these cases as analogous to hæmoptysis in cases of lung tuberculosis. Dr. Shepherd also remarked that frequent and painful micturition was often the first symptom of tuberculous disease of the kidneys, and said, that in every case where the diagnosis was obscure, the bacillus of tubercle should be searched for.

DR. BELL said that last summer, whilst in Paris, he had seen Guyon, in suspected cases of tuberculous bladder, perform suprapubic cystotomy, illuminate the bladder, and search for the affected portion. In one case he saw him carefully scrape out the ulcer with a sharp spoon, and afterward cauterize it. He could not say what was the result of this mode of treatment.

CORRESPONDENCE.

USE OF BRAIDED SILK SUTURES IN LACERATED CERVIX AND PERINEUM.

To the Editor of THE MEDICAL NEWS,

SIR: For several years past silver-wire sutures have been used almost universally in operations for restoration of lacerated cervix and perineum. Although nearly every authority in gynecology teaches that silver-wire sutures are the best in operations for lacerated perineum and cervix, I am convinced that the right kind of silk, properly prepared and properly used for sutures, *will accomplish as good results* as silver-wire sutures, and that there are advantages in the use of silk sutures over silver-wire sutures.

I have used silk sutures in thirteen cases with exceedingly good results, and Prof. Dunster has used it exclusively for two and a half years with most excellent results.

I claim for silk sutures:

(1) They are as easily introduced as silver-wire sutures.

(2) Easier to tie silk and adjust the parts than to twist silver-wire sutures.

(3) Much less irritation to the patient (especially in the perineum) while the sutures are *in situ*, which is important.

(4) Removal of silk sutures is very much less painful.

(5) Silk sutures give as good results as silver-wire sutures.

The *hard braided* silk should be used for the sutures (about No. 10 for the perineum, and a size or two smaller for the cervix), and should be rendered thoroughly antiseptic before and after waxing in bichloride of mercury solution (1 to 800 or 1 to 1000), or carbolic acid solution.

In tying braided silk one important precaution is necessary; it is best to make the knot with a triple tie, and the last tie to be drawn down tightly or it may become untied.

J. N. MARTIN, M.D.,
Assistant to Professor of Obstetrics and Gynecology
University of Michigan.
ANN ARBOR, MICH., Nov. 26, 1887.

NEWS ITEMS.

THE CASE OF THE CROWN PRINCE.—SIR MORELL MACKENZIE has written the following report of the case of the Crown Prince, from the time of his visit to England till his arrival at San Remo, from notes supplied by Dr. Norris Wolfenden and Mr. Mark Hovell, and the report is now published by the wish of the Crown Prince.

"After the removal of the growth last summer, and the subsequent application of electro-cautery, no recurrence of the growth took place. Some general congestion of the larynx remained, and whilst his Imperial Highness was in the Isle of Wight, a slight thickening of the mucous membrane on the posterior surface of the arytenoid cartilages near their base was observed by Dr. Norris Wolfenden, at that time in daily attendance on the Crown Prince. At one of my weekly visits I verified Dr. Wolfenden's report, and perceived that the thickening presented the form of a ridge raised to the extent of about a millimetre, of yellowish color, and extending horizontally from the outer border of one cartilage to that of the other. The action of the left vocal cord, which had been noticed in Berlin to be slightly impaired, continued in the same state. It should perhaps be here mentioned that soon after his Imperial Highness arrived in England, a marked disposition to catarrhal inflammation of the larynx and trachea, or fugitive congestion, was observed. A rather sharp attack occurred in the Isle of Wight, and this was followed by general relaxation of the mucous membrane of both the pharynx and larynx.

"The congestion disappeared while the Crown Prince was in the Highlands; and during this period the thickening at the base of the arytenoid cartilages, already described, was absorbed. On the return of his Imperial Highness to London, the condition of the larynx was on the whole satisfactory; the movement of the left vocal cord was much more free, and the voice strong, though not quite clear, owing to a slight increase in the congestion having taken place on leaving Braemar. The Crown Prince's general health was excellent.

"On September 9th a slight thickening was noticed on the posterior extremity of the left vocal cord, which increased for a few days, and then gradually disappeared, being on the 18th no longer visible. For a few days previous to the development of this thickening, the larynx generally had again been more congested. On September 13, Dr. Evans, of Paris, extracted the Crown Prince's left lower second molar tooth, which was much decayed, the fangs showing the result of a considerable amount of periostitis.

"On September 14th, an oblong thickening of the mucous membrane, about five millimetres in length and three in width, was observed by Mr. Mark Hovell nearly half an inch below the middle of the left vocal cord, and parallel with its free border. Mr. Hovell states that this swelling gradually increased in size, and when seen by me on September 22d it was nearly round, and measured rather more than half a centimetre in diameter. Two days later the Crown Prince took cold, and on the following day complained of a sense of fatigue, disinclination to take food, and great sleepiness in the daytime. On examining his throat, the left aryepiglottic fold was found to be œdematous. His temperature was 101° F. In twenty-four hours the œdema had entirely disappeared, and the temperature had become normal. Although the œdema was apparently due to cold, the possibility of its being caused by limited perichondritis was discussed at the time. The acute swelling had no apparent effect on the little thickening below the left vocal cord, which gradually became smaller, but did not entirely disappear.

"The Crown Prince continued to enjoy good health after his arrival at Baveno, and when I left Italy everything appeared satisfactory, though slight general congestion remained, as well as the thickening referred to previously. On the evening of October 17th, Mr. Mark Hovell noticed a marked increase in the congestion of the larynx, both vocal cords being of a bright red color. During the next few days the congestion decreased; but on the 21st the hyperæmia again increased in intensity and was more diffuse. On the 27th an increase was noticed in the size of the thickened surface beneath the left vocal cord, and at the same time slight general tumefaction of the left side of the larynx appeared. During the next few days the thickened surface slightly increased, and on the 31st the surface was seen to be irregular, and in one place there was a distinct spur or projection. The next day superficial ulceration of the new formation was noticed, and the left vocal cord was seen to be slightly swollen along its free edge. On the 28th the voice of His Imperial Highness was quite clear; and, indeed, in the opinion of the Crown Princess, was perfectly natural, but since this date the Crown Prince has been much more hoarse. On October 30th a slight reddish projection was noticed beneath the *right* vocal cord; this remained stationary for two or three days, then disappeared, and formed again on November 5th. On November 1st a slight enlargement of the left submaxillary gland was noticed, and this subsequently increased in size.

"On November 3d the new formation had further enlarged, and was now rather more than a centimetre in diameter, and raised to the extent of about four millimetres. The extension of the growth since it was first seen had always been upward. On the morning of the 4th a very slight œdema was noticed at the base of the left arytenoid cartilage, which disappeared in the evening, and was again present on the morning of the 5th.

"On the following day I arrived, and found the state

of the larynx such as Mr. Hovell had described to me. On the afternoon of the 8th, intense œdema of the mucous membrane covering the left arytenoid cartilage was noticed, and in the evening the œdema involved the entire fold, which was tense and red. On November 9th the patient was examined by Professor Schrötter and Dr. Krause, but, owing to the œdema, it was impossible to obtain a complete view of the new formation at the lower part of the larynx. On November 10th the patient was again examined by the same physicians, and also by Mr. Moritz Schmidt; the œdema was already much diminished, and a good view could be obtained of the whole of the larynx.

"In my opinion, the œdema is due to limited perichondritis, which in its turn has probably been set up by the growths which have been formed from time to time in the larynx. Although the nature of the growth which has lately appeared has not been determined by microscopic examination, it presents every appearance of cancer."

The *British Medical Journal* of November 19th, calls special attention to the following points in this report:

1st. The occurrence on the posterior surface of the arytenoid cartilages of a deposit, which was after a time absorbed; 2d. A swelling taking place at the site of the old growth and then disappearing altogether; 3d. A swelling forming under the left vocal cord, which first increased, then receded, and subsequently formed the base of the new growth; 4th. A swelling, or growth, under the right vocal cord.

The formation of these growths, and the total absorption of some of them, with the retrogression and subsequent development of others, points to the probability of the fact that chronic inflammation has played a considerable part in the development of the disease. It is no doubt this feature which has masked its malignant nature. It is noteworthy that the deep-seated cervical glands are not affected in this case (the superficial glands seldom are involved in malignant disease of the larynx). There is now slight swelling of the submaxillary gland, but this has only recently been observed, and is of little significance in the absence of any secondary enlargement of the lymphatic glands. That a case of cancer of the larynx should run ten months without any ulceration, except such as was produced artificially by electric cautery and operation with the laryngeal forceps is also remarkable; indeed, the healing of the wounds thus caused would seem to indicate that the affection in its early stages was not of a cancerous nature.

THE PREVENTION OF PUERPERAL FEVER.—The health authorities of Vienna have instituted a strict supervision of midwives, in which they call upon all practitioners for aid. This is intended to cover reports and inspection of each woman to determine whether she has recently attended puerperal fever, and whether her appliances and instruments are clean.

THE EFFECTS OF MELINITE.—At a meeting of the Paris Academy of Surgery, on October 26, 1887, a number of cases of wounds by melinite were reported, caused by a recent explosion at Belfort. The wounds were peculiarly penetrating. The skin was very little injured, and the shock produced was out of proportion to the extent of the lesions. The wounded presented marked evidences of severe nervous shock. Death had resulted from cerebral injuries and from sepsis, leading to a suspicion that poisonous gases were generated by the explosion.—*L' Union Médicale*, Nov. 3, 1887.

THE DANGERS OF FOOTBALL.—The *Boston Medical and Surgical Journal* reports that at the Harvard-Princeton football match at Cambridge, on November 11th, which was very warmly contested, Holden, the captain of the Harvard (victorious) team, who was playing half-back, sustained a fracture of the sternum, with depression of a portion of the bone.

THE MEDICAL INVESTIGATOR is the title of a journal shortly to appear, which will be devoted to the cause of temperance, from the standpoint of medicine. It is announced to be published at Louisville, Kentucky.

DIRTY FLOORS IN LIVING ROOMS THE BREEDING GROUNDS OF BACTERIA.—EMMERICH, of Leipzig, is quoted by the *Sanitary News* of November 12, 1887, in a series of extensive investigations he has made regarding the contamination of dwellings by accumulated filth:

He made a large number of analyses of the damping material used for filling up the space between the ceiling of one flat, and the floor of the flat above. He found an almost incredible pollution of this material. His analyses show that, to use his own words, "there exists nowhere in nature, not even in the neighborhood of human dwellings, a soil so highly contaminated with nitrogenous organic substances and their decomposition products as the damping material under the floor of dwelling rooms." The amount of chloride of sodium found in this material was on an average seven times greater than that found in the ground under leaky cesspools, and twelve times greater than that in the soil round a dung-hill, although this soil was visibly soaked with filth. When the coarse pieces of stone were separated from this material, it was found that the finer dust and sand that was left, contained even more nitrogenous matter than human excrement. "In the damping material of a single room, there was usually more excremental matter present than in a large cesspool." That all this filth is alive with microörganisms, is shown by the amounts of products of decomposition which result from their activity. Thus under the floor of one single room, Emmerich found that there were more than 6 cwt. of nitric acid in the form of nitrates. He also showed that the carbonic acid in the air of rooms left shut up and empty increased, although all other known sources of carbonic acid, such as subsoil air, etc., were excluded. The chief cause of this contamination was undoubtedly the soaking of fluids and shaking of dust through the fissures and spaces between the boards in the floor. Often, however, the rubbish which was used as damping material was contaminated from the beginning, having been taken from old houses, or rubbish heaps, such apparently as many houses in this country are built upon.

Emmerich followed up this research by another no less interesting one in connection with the same subject.

In a prison at Amberg, there had persistently occurred for years epidemics of croupous pneumonia. The last of these had attacked every seventh, and killed every twentieth prisoner. As is well known, the late Dr. Friedländer, of Berlin, discovered the presence in cases of croupous pneumonia of a species of bacterium, cultivations of which, when inhaled by, or inoculated into certain animals, produces a similar disease in them. There can thus be little doubt as to the causal connection between this organism and the disease, or at any rate certain forms of it. Emmerich examined the damping material from the infected rooms in the Amberg prison. He not only found this material full of organic matter as usual, but actually discovered Friedländer's bacterium in enormous numbers.

POISONING FROM ARSENICAL WALL PAPER.—DR. EVERETT SMITH, of Boston, reports in the *Boston Medical and Surgical Journal* of November 17, 1887, the case of a lady who, upon returning to her town house for the winter, was seized with symptoms of irritant poisoning. Although some of the wall-paper had been found to contain arsenic in considerable quantities, it had seemed at first improbable not only to myself, but to Drs. Wood and Whittier, whom I consulted in the case, that the wall-paper already found to contain arsenic could be the sole cause of all this arsenical poisoning. The paper was upon the walls of a small room on the entrance floor of the house where the patient had been very little, the parlors were on the floor above, and her chamber on the floor above the parlors. In hopes, therefore, of finding some other source of arsenic, dress goods and window draperies were analyzed, but with negative results so far as finding arsenic were concerned. Chromium was, however, found in large amounts in one pattern of dark green dress goods. I had early seen to it that all cretonnes and turkey-red material were removed from the chamber, since they are well known to be highly charged with arsenic.

The almost conclusive proof, however, that the sole cause of my patient's sickness existed in this room is as follows: The dangerous wall paper was removed while the patient was convalescent. She insisted that she was not yet strong enough to venture from home and so remained in the house, confined strictly to her room, while the work went on. After the walls had been scraped and washed, and the room thoroughly cleaned preparatory to the laying of the new paper, she ventured to look into the room but remained there scarcely ten minutes. She very soon had a return of nausea and vomiting, which lasted nearly twenty-four hours. I thereupon insisted that she go into the country and that in her absence the entire house be thoroughly cleaned and dusted. This was done, and since her return she has presented no further symptoms of arsenic poisoning.

Another member of the family was affected by the removal of the paper, his symptoms taking the form of a sharp diarrhœa. The other two members did not at any time present marked symptoms of arsenical poisoning, except a noticeably sallow complexion and a pretty constant feeling of lassitude all winter. They had, however, had more exercise in the open air than my patient.

THE CONSULTANTS AT SAN REMO. — The *British Medical Journal* describes the specialists called to meet in the case of the Crown Prince as follows:

The German specialists who have been called in to advise with Sir Morell Mackenzie as to the treatment of the Crown Prince of Germany in the critical phase on which his illness seems now to be entering are all well known to laryngologists throughout the world, though their names may not be familiar in this country. Dr. L. von Schrötter, who is Professor Extraordinary of Laryngology and Internal Medicine in the University of Vienna, is the leading teacher of throat diseases in that great school, and his reputation throughout Germany is of the highest. He was one of the pioneers of laryngology, and his name would certainly be always one of the first mentioned when the question of calling in further advice arose. Dr. Hermann Krause, though comparatively a young man as age is counted in professional life, is a distinguished teacher in the University of Berlin, and stands high in his special line. Dr. M. Schmidt, of Frankfort-on-the-Main, though not perhaps quite so well known as his two colleagues, is a sound and experienced specialist, and has, moreover, the great recommendation in the present case of having already seen and treated the illustrious patient.

CORRIGENDUM.

Page 588, 2d column, 19th line, *for* 1861 *read* 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM NOVEMBER 22 TO NOVEMBER 28, 1887.

So much of *S. O. 235, A. G. O.*, October 8, 1887, as relieves *Lieutenant-Colonel and Surgeon* CHARLES T. ALEXANDER from duty at St. Louis, Missouri, and directs him to report for duty at Fort Meade, Dakota, is amended so as to take effect on January 1, 1888.—*S. O. 274, A. G. O.*, November 25, 1887.

BROWN, PAUL R., *Captain and Assistant Surgeon.*—Ordered to Fort Niagara, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

SKINNER, JOHN O., *Captain and Assistant Surgeon.*—Ordered to Fort Ontario, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

RICHARD, CHARLES, *Captain and Assistant Surgeon.*—Ordered to post near Denver, Colorado.—*S. O. 270, A. G. O.*, November 19, 1887.

CARTER, E. C., *Captain and Assistant Surgeon.*—Ordered to Willett's Point, New York.—*S. O. 270, A. G. O.*, November 19, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 26, 1887.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from duty at the Smithsonian Institution, and ordered to the Washington Navy Yard.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*